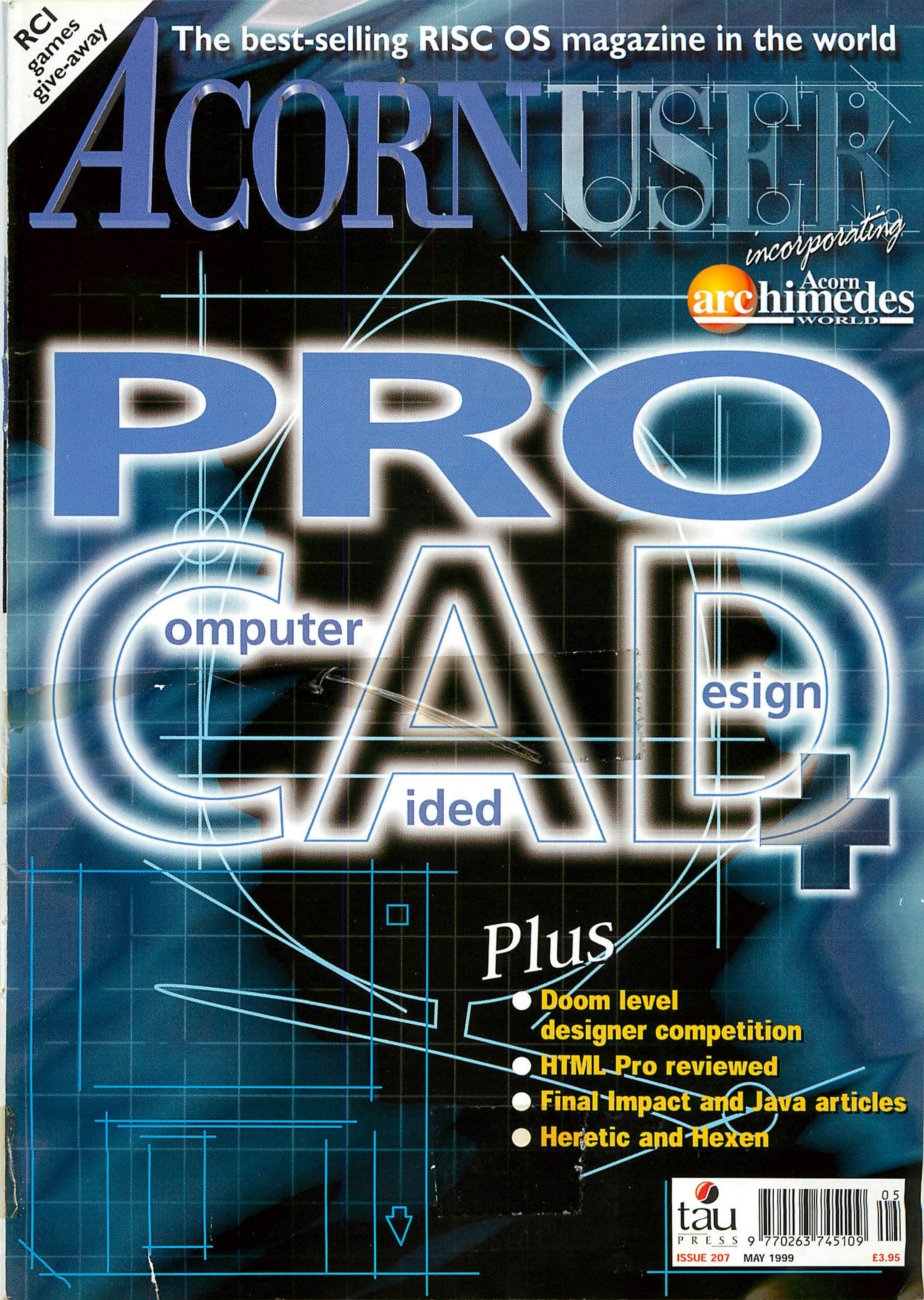
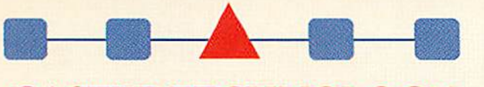

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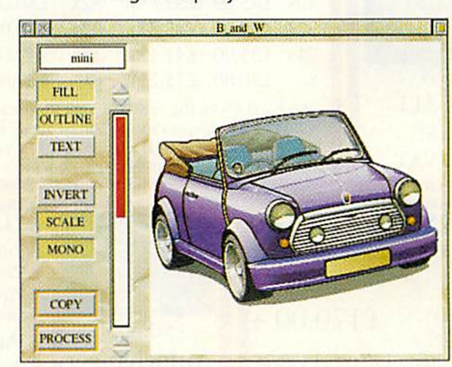
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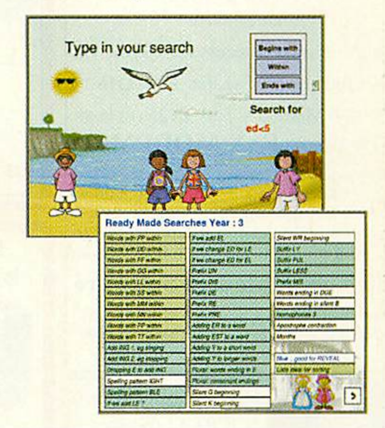
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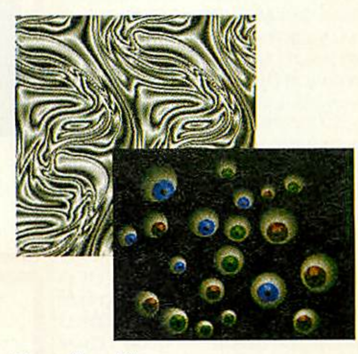
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Next month in Acorn User

The making of RISC OS 4 – inside news from the RISCOS Ltd camp; Arc World's MIDI series continued, plus games and Clip-art CD's reviewed

June issue on sale 13th May 1999

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Robert Duncan Cartoon KIT	£39.00
TopicArt CD	**£10.00**
Tots TV ABC	**£19.00**
YITM Electricity and magnetism	**£15.00**
YITM Elements	**£15.00**
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YITM (all three titles)	**£35.00**

Various Hardware bargains

A3000 2Mb bases from	**£65**	**£76.38***
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A3020 2Mb bases from	**£125**	**£146.88***
A4000 2Mb bases from	**£150**	**£176.25***
A5000 4Mb bases from	**£250**	**£293.75***
A4 Portables (6 months wty)	**£600**	**£705.00**
RPC bases from	**£468**	**£549.90***
Monitors Various	**POA**	**POA**
Pioneer SCSI 4x 6x stack ext	£139.00	£163.33

new items 12 months wty *2nd user 90 days wty

CD General Resource Titles

CD General Resource Titles	Ex. VAT Inc. VAT
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50,000 Clipart	£15.00
75,000 Clip Art (WMF) & images	£25.00
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3D Body adventure	£10.00
FUN SCHOOL 5 (dreamland)	£10.00
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GLOBAL MATHS ALGEBRA	£10.00
GLOBAL MATHS NUMBERS	£10.00
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MATHS BY COLOURS	£10.00
MARIO TITLES (Play School etc)	£10.00
MS FINE ARTIST	£10.00
SHOW & TELL (inc. free calculator)	£15.00
CD Multimedia /Reference Titles for PC	
3D Garden Designer	£15.00
Androute Routerfinder for UK	£10.00
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Bible	£10.00
GEOFF HAMILTON GARDENER CD	£10.00
MS BASKET BALL	£10.00
MS BOOKSHELF 94	£8.00
MS CINEMANIA 94	£8.00
MS CINEMANIA 95	£10.00
MS DANGEROUS CREATURES	£15.00
MS Encarta 98 Encyclopedia Deluxe	**£35.00**
MS JULIA CHILDS HOME COOKING	£15.00
MS MUSIC CENTRAL	£10.00
MS Magic School Bus	£15.00
ROMANS (Anglia)	**£15.00**
ROUTE 66 (UK and Ireland)	**£15.00**
VISIONS OF MARS CD	£10.00

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MICROGRAFIX DESIGNER	£25.00
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MS WORKS V4.0	£25.00
Photo Album maker	£10.00
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All prices are correct going to press. E&OE

All goods are guaranteed but not supplied on approval

RISCOS Ltd secures RISC OS 4

Every month we have been hoping to report a breakthrough in the resurrection of something useful from Acorn after the closure of Acorn's Workstations division last year. At last, following disappointment and other delays, Acorn/E14 has secured the future of RISC OS by granting an exclusive license to complete the development of RISC OS 4 to RISCOS Ltd, the independent company formed by Acorn dealers and developers earlier this year.

The new company will bring it to market as an upgrade for current Risc PC and A7000+ users and for new machines dedicated to the desktop market in following months. This means RISCOS Ltd now has access to the full source code of RISC OS and programmers are already at work preparing it for the upgrade release.

It should also be possible for RISCOS Ltd to produce new versions of RISC OS which are no longer dependent on the original Acorn IOMD and VIDC20 controller chips, enabling third-party off-the-shelf chips to be used instead. Once this is done it will be possible for many more hardware manufacturers to produce RISC OS compatible products, including an upgrade for the existing Risc PC. As if to underline this hope, a company in Germany called Galileo RISC Computers has publicly stated it will develop RISC OS computers.

Chief Executive of Element 14, Stan Boland said "I am proud to announce, that after having originally developed RISC OS, Element 14 now feels that the time is right to offer the other companies who have supported Acorn for the past 20 years the chance to continue to develop the RISC OS market"

Senior Vice President of Marketing, Andy Mee went on to say that "By licensing RISC OS 4 to RISCOS Ltd, there will be more chances for both new and existing users to protect their current investment in Acorn computers and also benefit from the advances that the dedicated RISC OS developer community is able to offer in the future."

Managing Director of RISCOS Ltd, Paul Middleton commented "The announcement by Acorn that they were closing the Workstations Division last year had sent shockwaves through the Acorn community. I see the signing of this agreement as a very positive sign for current Acorn users.

"While Phoebe Risc PC 2 was cancelled by Acorn due to the economic and commercial climate, users should not be dissuaded from buying RISC OS based computers."

RISCOS Ltd's mission statement goes like this: "To provide a continued availability and route to market for the RISC OS 4 product originally developed by Acorn Computers and to develop that product into a full 32-bit based operating system to support the future generations of ARM based processors." The company will be dedicated to developing and promoting RISC OS in order for the OS to have the best possible opportunity to thrive in whatever hardware host it can find.

RISCOS Ltd has also set itself the tough task of delivering a full 32-bit version of RISC OS which will be required for future versions of the ARM processor when the original 26-bit internal architecture is abandoned.

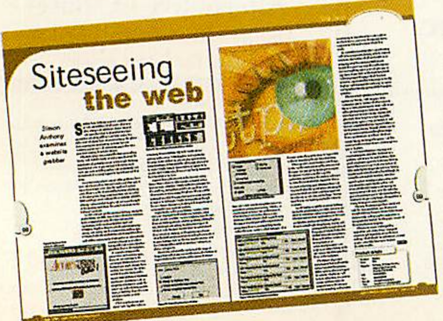
The RISCOS Ltd deal is not a free for all. As we understand it, Acorn/E14 won't want RISCOS Ltd competing with them, although the current direction of E14 into the digital TV set top box market would appear to make the likelihood of this pretty small. Our understanding is also that E14 will retain full access any developments made by RISCOS Ltd for their own use. However, once again although some older products E14 currently depends on continue to be RISC OS-based, this dependence disappears the further down you travel along E14's road map.

Although Phoebe wasn't saved and is well past resuscitation, RISC OS is the real jewel in the old Acorn crown. Some Acorn stalwarts may have to swallow some pride in that the days of custom-designed silicon are now over, but RISC OS and the ARM are enough to keep the spirit that was Acorn in the eyes of many, including readers of this magazine, alive and for that spirit to prosper. RISCOS Ltd now has its own Web site at: http://www.

RISC OS Ltd

New-look AU next month

Next month's June issue of *Acorn User* will feature radical (but still readable) new page designs to give the magazine a fresh new look and feel. This is accompanied by a price rise to £4.20 per issue, however you can avoid the additional expense by subscribing as soon as possible at the old price.



Other developments include a change in fulfilment house. Database Direct will no longer be handling our subscriptions. The new company will be shipping magazines but they will not be handling subscription transactions. In future, all subscription calls will come to Tau Press and subscriptions by mail should not be sent to Database Direct but to the magazine address. The national rate 0870 subscription hotline number is to be redirected to us and a new subscription fax line will also be available soon.

RISC OS pre-emptive multi-tasker

Wimp2 v0.35, the latest version of the pre-emptive multi-tasker for RISC OS, has been released. The latest version deals with some bug reports and other tidying up. However, this version has not been extensively tested according to its author. Wimp2 is available from Niall at http://www.nedprod.com/programs/RISC-OS/Wimp2/. Comments on Wimp2 should be sent to e-mail address: wimp2@nedprod.com



Galileo lives on – in Germany?

Two years ago, it seems now like another age – we reported the then-big idea from Acorn which was called Galileo. This was to be a software version of the success which came out of Acorn to become ARM Ltd, an advanced and compact operating system to conquer the world. Today, bits of Galileo code live on in Acorn/E14 projects, but the Galileo OS was abandoned some time ago. Now, Galileo was a nice name and a German concern has adopted it as the title of its bid to bring to market nothing less than an exciting new range of RISC OS-compatible computers.

Galileo RISC Computers, based in Wolfsburg, Germany, have set up a Web site declaring their devotion to ARM-based computers and RISC OS. Unfortunately, the English translation of the Web site leaves a little to be desired and we're not entirely sure what the long term plans for Galileo RISC Computers are. One statement, for example, reads like this: "The first Galileo models are delivered as intended with RISC OS. Since this however no genuine network operating system is, is the following decision please:

We will develop a new OS particularly for the Galileo! Special features are to become e.g. the support of clusters, multi-processing and ARMv5." From what we can fathom, the first Galileo models are planned to be RISC OS 4 models rather then being delivered now and that unless a new 32-bit version of RISC OS becomes available in time, the company may have to develop its own OS.

Despite the lack of apparent product, Galileo have already quoted starting prices of DM999 – which is under £400, making them competitive with cheap PCs, although we have no idea what peripherals you get for this price tag. However, Galileo is promising its first computers before the end of this year, powered by a 280MHz StrongARM. No doubt we will be hearing a lot more about Galileo in the coming months – and we'll certainly be keeping an eye on them. The Galileo Web site is at http://www.members.tripod.de/galileo/e_index.html

Wheel-mouse supported

John Scott has developed a mouse driver for Microsoft-compatible mice which feature a wheel instead of the centre of the usual three buttons. The wheel, which doubles as a button, is typically programmed to scroll the contents of a window as an alternative to dragging the vertical window bar. However, John has not yet decided what to do with the added feature for RISC OS users.

John says he has decided to release the driver which he originally developed for his own use. However, he warns that the device number and module name have not been registered yet but he doesn't think that that will be a problem for a while.

If you would like a copy of the driver, John asks you e-mail him at jjrs101@cs.york.ac.uk with "Subscribe Wheel Mouse" as the subject so he can filter them out. There is no charge.

MP3 module

Peter Teichmann has converted his MPEG audio decoder program into a module which makes it accessible to other applications. The module supports the increasingly popular Internet music file standard, MP3. Peter reports that the module requires about half the CPU bandwidth of a StrongARM Risc PC. Peter can be contacted in Germany at teich-p@rcs.urz.tu-dresden.de and his Web site is at http://rcswww.urz.tu-dresden.de/~teich-p

Cerilica's overseas dealers

Overseas Acorn users looking forward to Cerilica Software's new *Vantage* vector drawing suite will be able to buy from three official overseas dealers. Cerilica says each dealer has been selected on the basis of knowledge and proven track-record in the Acorn market, with customer care being a high priority.

North East Europe, (Germany, Denmark, Sweden, Norway and Poland), will be supplied through Orcom Systemhaus GmbH, Leipziger Straße 70, D-06766 Wolfen, Germany, tel: +49 3494 6950, fax: +49 3494 45164, e-mail: orcomshw@r-w.de, Web: http:// www.orcom.de

South West Europe, (The Netherlands, Belgium, Luxembourg, France, Italy, Greece) will be handled by X-Ample Technology bv, PO Box 77, 5340 AB, Oss, The Netherlands, tel: +31 412 634433, fax: +31 (0) 412 643884, e-mail: paul@xat.nl, http://www.xat.nl

In Australia, your dealer is The Image Factory, PO Box 599, Rosanna, Victoria, 3084, Australia, tel: +61 3 9458 3599, fax: +61 3 9458 3488, e-mail: imagfact@starnet.com.au Orcom will be selling Cerilica *Vantage* at the price of DM 699 (inclusive of MwSt. @16%) + shipping. The Image Factory price will be Aus$530 + shipping. XAT's pricing information will be available soon.



Cerilica says it has received many enquiries from overseas customers concerning a version of the successful UK deposit scheme.

Now that the UK scheme has come to an end, Orcom and The Image Factory have agreed to offer an identical scheme in their territories. XAT of The Netherlands will hopefully be able to join in too.

For details of the individual deposit offers which will enable you to save money, please refer to Cerilica's Web site updated ordering page: http://www.cerilica.com/

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Wakefield news

The great news for Wakefield show visitors (15th/16th May) this year is that now the RISCOS Ltd deal has been formally struck with Acorn/E14, RISCOS Ltd can be an exhibitor at Wakefield in force. Millipede Electronic Graphics, the video effects hardware company which is working on next-generation Risc PC internals, are also committed to attending the show.

In total, it looks like there will be up to 60 exhibitors and it's hoped that late bookers will mean this figure ends up as a conservative estimate. For more last minute show information, have a look at: http://www.cybervillage.co.uk/acorn/wakefield



Sibelius companion utility

A new demo version of *!SibToDraw*, the recently announced object-based graphic editor program designed to work alongside the well-known Sibelius music notation application, has been released. *!SibToDraw* works with Sibelius to produce any type of musical score. It loads page and text style settings directly from Sibelius, importing single pages as well as entire scores, correcting a number of things – rastral size, over-hanging slurs, text hyphens and so on – on the fly, and converting all music symbols into paths automatically.

All editing actions on paths, text and sprites are solid, performed in real time, making it an interesting piece of software also for non-Sibelius users. *!SibToDraw* is available from Notensatz Freiburg, Germany. For more information, check the Web site at http://www.notation.de , or e-mail: info@notation.de.

MAUG features Icon Technology

The Manchester Acorn User Group meeting to be held on the 27th April will feature a guest attendance by a speaker from Icon Technology. The meeting will take place in the Cockcroft Building at the University of Salford, starting at 7:30pm. Admission is free. For more information, check http://members.tripod.com/~AcornMan/index.html or e-mail Paul Johnson at P.F.Johnson@chemistry.salford.ac.uk

Parallel to SCSI adapter

If you have been saving your pennies for a pricey SCSI interface card and still can't afford one, Pineapple could have a solution. This is a parallel port to SCSI adapter cable which allows SCSI scanners to be used with any Acorn computer that has a bi-directional parallel port. This includes the A3010, 3020, 4000, 5000, 7000 and Risc PC. The cable has a through port for a printer and power is derived from the SCSI connector on the scanner.

Pineapple say the speed of operation of SCSI scanners via their adapter is similar to that obtained using a full SCSI II card. Presently the only SCSI devices supported are scanners, but it may be possible to add extra software to drive other SCSI devices if there is sufficient demand in the future. Pineapple Software's new hardware product is priced £59 inc.VAT. Pineapple is on the Web at http://www.pineaple.demon.co.uk.

ChiOS on hold

While RISCOS Ltd is now beginning to see the light at the end of the tunnel. The ChiOS and ChiBER project to bring a RISC OS-equivalent operating system with ARM card to a PC-style PCI architecture system has been put on hold, according to Jason Tribbeck. Apparently the main financial backer of the project has pulled out. The project remains frozen until new backing can be found. Potential backers can contact Jason via e-mail at: chios@chios.org.uk. The ChiOS Web site is at http://www.chios.org.uk/

NCs post-Xemplar?

With Xemplar now unconnected with Acorn (and also moving out of Cambridge) and in the process of being absorbed into Apple UK, the NCs in education initiatives which Xemplar worked hard on looked like being abandoned. However, Dr. Stephen Borrill, who did much of the work which created the Xemplar Network Computer Solution, is setting up a new company called Precedence Technologies Ltd (http://www .precedence.co.uk/) to continue supply of NCs and NCManager servers along with the continued development and support. Dr. Borrill commented: "We've spent two long years evangelising about the Acorn/Xemplar NC to schools and things are really starting to take off."

He added: "Xemplar have a large installed base of NCs, the support of which will hopefully be transferring to Precedence. I'm very keen to reassure both existing and potential customers that the support for NCs in schools is going to get even better with a much stronger focus along with my partners."

XEMPLAR EDUCATION

We'll have more information on Precedence Technologies next month.



news

Linking old and new

Prolific Acorn utilities author, John Kortink, has updated his 65Link application to make it compatible with more Acorn machines, including the A5000. 65Link connects a 6502-powered Acorn, like a BBC Micro, to an ARM-based Acorn.

The host ARM-based computer can then share its harddisc storage capacity for files being used by the 6502 machine. 65Link's only requirement is that the 6502 machine has a user port, and that the ARM machine has a parallel port that supports 'PS/2' mode. Most 6502 and recent ARM machines qualify for this. In addition, you will need to make a suitable cable and have an EPROM programmer. 65Link should work *with the RISC* PC, A5000, BBC model B and 6502 second processor and will work on any Master, A7000, A4000, A3020, A3010, A4 and non-6502 second processors.

65Link 1.20, which is freeware, can be downloaded from: http://www.inter.nl.net/users/J.Kortink. John can be contacted at e-mail: kortink@inter.nl.net

Over £4,000 for Comic Relief

Paul Johnson's online software and hardware auction in aid of Comic Relief generated pledges totalling £4,277. Items auctioned ranged from a lifetime membership of the RISC OS Foundation to some Acorn Master 128s from Acorn/E14. Paul has also found out that this is the first time that an online auction has contributed to the Comic Relief appeal.



Paul's Comic Relief Web site is at: http://www.acornusers.org/comicrelief/

Big Ben Expo 99

The now traditional Big Ben Acorn show in the Netherlands will take place on Saturday 5th June 1999 at the Hotel Mercure Nieuwegein. One thing you always hear about is how much fun the Big Ben Club show is each year. This year should be no exception. Naturally, the show is dominated by Dutch and German Acorn fans and suppliers/developers.



However, there will be some familiar names at the show from the UK point of view. Icon Technology, R-Comp and RISCOS Ltd will definitely be there and several other high profile UK companies are seriously thinking about it.

If you'd like to bé there too, contact Matt Hendriks, e-mail: bbcEXPO@careit.demon .nl

Psion file access

Bournemouth-based Alexander Thoukydides has developed a new freeware filing system, called *PsiFS*. This gives access to files on an EPOC16 or EPOC32 device, such as an Acorn Pocketbook or a Psion Series 5, respectively. Files can be dragged simply from a RISC OS directory to a Psion directory using the mouse. *PsiFS* is similar to Interconnex's *PsiRisc*.



The main differences being that *PsiFS* is free, but it does not contain any file converters. *PsiFS* implements intelligent read-ahead caching of directories making it significantly faster than *PsiRisc*, and automatically refreshes any open Filer windows to show changes made to files on the EPOC device. More infor-mation is available on the Web at http://homepages.tcp.co.uk/~thouky/tcfp.html, e-mail: alex@ thouky.tcp.co.uk

New Creator and Translator

Also from John Kortink this month, updates of his Creator and Translator utilities. Creator 3.30, the shareware bit-map image conversion utility, has been rewritten in C++ and there have been some changes made to the user interface. Creator can now also write the Windows BMP form at and is better at reading BMP files. Translator 8.02, the shareware combined pixel image viewer, processor and converter is up to 6 times faster loading JPEG and PNG images. John's extensive library of utilities is available from his Web site at: http://www.inter.nl.net/users/J.Kortink

Norfolk-based user group

Jonathan Balls, based in North Walsham, is looking to see if there is scope for a new Acorn user group in the Norfolk area. The proposed new group will be called the Norfolk Acorn User Group and is likely to meet in Norwich. If you're interested in supporting Jonathan, you can contact him at Jonathan Balls, 20 Rye Close, North Walsham, NR28 9EY. Jonathan can be e-mailed at naug@ballsy. demon.co.uk.

New Dutch RISC OS company

Ottens' Dutch Designs, O'dd may have an, um, odd name, but it's the latest company to join the RISC OS fold. The company comprises two Dutch brothers, Maarten and Steven Ottens, who have been Acorn computer users for more then ten years and have several years of designing experience.

The brothers said: "We want to show the world the power of this platform so we design and we design in specific web pages. We know many people can make home pages, but not many can make them like RISC OS: small, fast, beautiful and easy to use. We can make those pages. We also design logos, company styles (such as logos, letterheads) and many other things. For more information about O'dd, e-mail steveno@lx. student.wau.nl. Their Web site is at http://www.futuretrain. com/odd

Contacting me

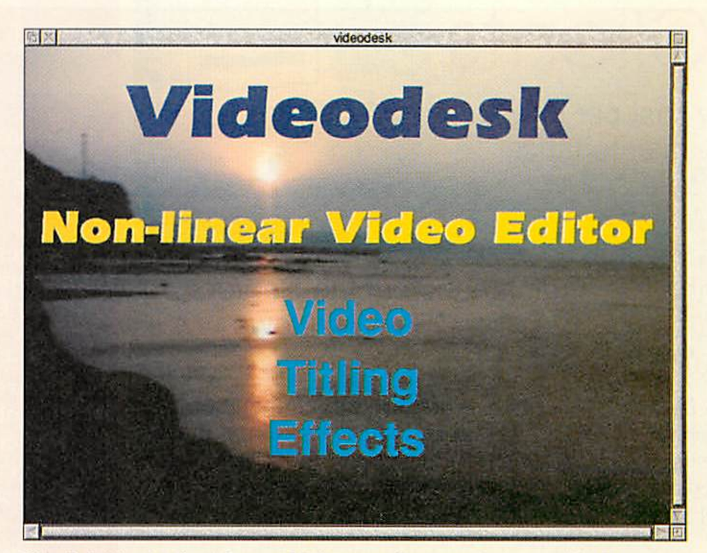
You can contact the news page by writing to me Ian Burley at the usual Acorn User address or by e-mail: news@acornuser.com

Videodesk

Videodesk is a powerful non-linear video editing system. It allows full-size, full-colour and full-motion video to be edited to frame accuracy, and effects and titles added. The finished material can then be output back to video for recording or display.

Key Features:

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Sophisticated video editing software is supplied as standard, which is flexible and simple-to-use. Editing is performed on a multi-track time-line with separate audio and video tracks.

Video effects are generated digitally and include over 100 dissolves, wipes, fades and slides. Comprehensive titling software uses the RISC OS outline font system, and titles can be made to scroll, flash, fade and be overlayed onto the video.

Risc TV



Risc TV is a unique multimedia digitiser complete with built-in television tuner and audio processor, which allows you to watch television on the desktop and digitise high quality still images from the tuner or an external video source.

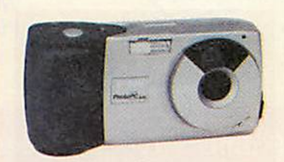
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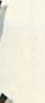




As the leading independent supplier of digital cameras to the Acorn market, we have support for over thirty different models from the leading manufacturers - Agfa, Epson, Olympus, Sanyo, and Sony.

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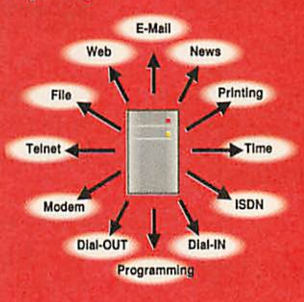
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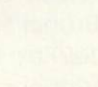


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The real phoenix

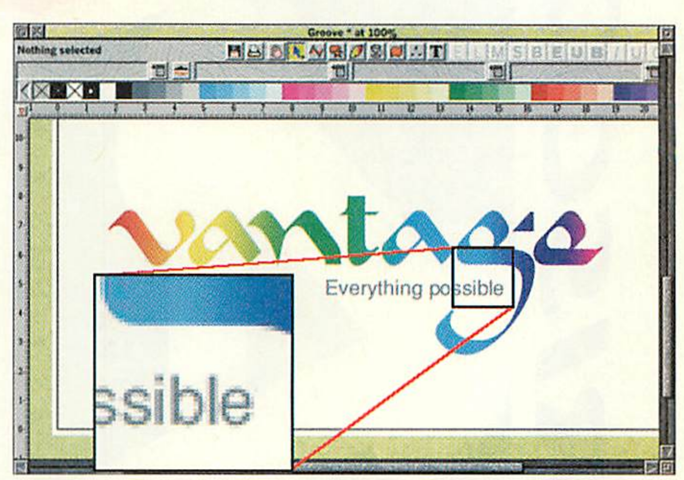
At a time of such uncertainty over the future of RISC OS computers, the future of RISC OS software could not be more assured. The graphics world is about to discover a revolution in computer based design and publishing and it's happening right here on RISC OS machines.

At this point the more astute (if you'll pardon the pun) among you will have noticed that I'm about to start hyping up *Cerilica Vantage* again, but to be honest I think it needs to be done. While the RISC OS market is steadfastly marching onwards under a bold but very uncertain banner of 'business as usual', a new application big enough to make waves even outside of our niche scene is about to be launched.

John Stonier's latest show in the South West was the first chance for the public to see the almost complete *!Vantage* in action and with the final renderer on show it was an impressive sight.

The list of technical specifications and indeed achievements at such a fast rendering speed as detailed on the Cerilica web site can easily be written off as technical jargon, but with a demonstration of the package comes the recognition that these guys mean business and *!Vantage* is here to do that business.

The low key launch of the beta-test version of *!Vantage* last year was seen by many sceptics as just another great hope for the would probably never see a final release. Indeed, many people on the scene that I've talked to know very little about the package at all, especially after the rather unfortunate project name change.



!Vantage's anti-aliasing at work

However, all this rather understated build up has actually been an intensive final development phase of the project which has seen a lot of involvement from ordinary users.

This bears out when you get down to the finer points of the package and it's hands-on usability. For me, a quality application will have all those fantastic elements to the interface that make your user productivity surpass anything you're ever likely to see on a Wintel PC.

In the latest news release Nick Van Der Walle, Cerilica's Marketing Director mentions that the invaluable ability to drag-select objects and then drag them straight out of the *!Vantage* window to another application wasn't even mentioned before now due to it's lack of perceived importance over other features.

But it's this attention to detail that really shines through when you sit down and use the application, or even better, see a demonstration from the team. So we aren't just talking a revolution in real WYSIWYG ink printing and colour separation which on their own are quite a lot to shout about.

Future Publishing's new DTP magazine was set to be PC and Mac-based only, but after seeing the Cerilica Website the editor is already planning a full review of the software once complete. This is only the start of 'real world' interest in *!Vantage* and our RISC OS platform.

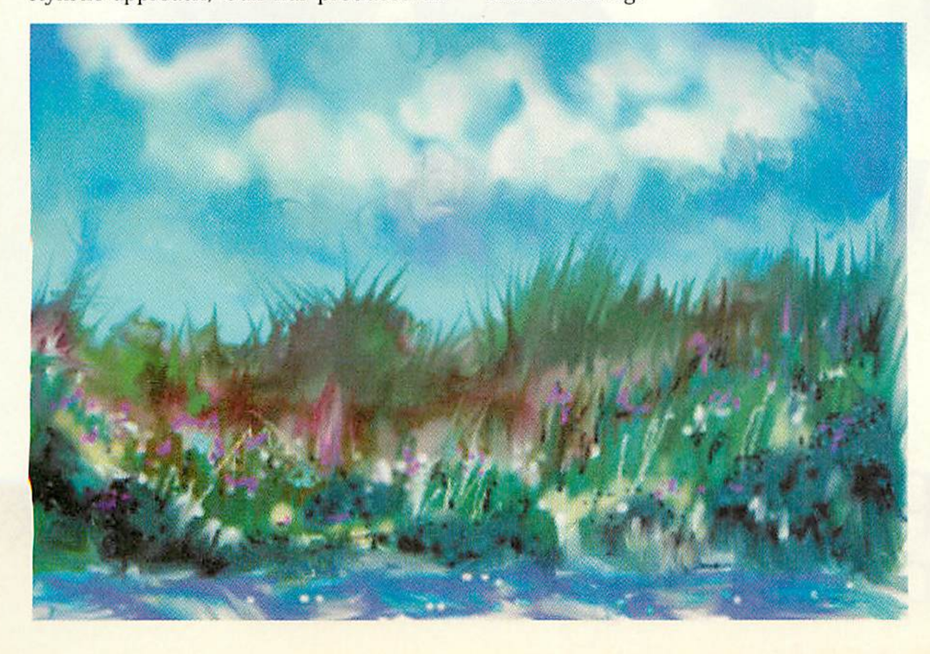
It's certainly not the first time these things have been experienced – whether it was *!Artworks* or the flagship *!Sibelius* package, we've always been so close to widespread recognition. But with *!Vantage's* incredible benefits over existing software, Cerilica are set to take the publishing world by storm.

http://www.cerilica.com/
01989 567350

Picture of the month

This month's reader art is sourced from a stock of excellent work from the art students of well known PD author Jochen Lueg. The winning picture was produced by Gail Mahon using *!Studio24Pro*. Working with a very stylistic approach, Gail has produced an amazing picture of a wind-swept coastline.

Congratulations and the usual Graphics page prize of *!Phantasm* and £15 goes to Gail for one of the best Pic of the Months in recent times. Keep those entries coming.



Contacting me

You can contact the Graphics page by writing to me, Paul Wheatley, at Acorn User, Tau Press Ltd, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to graphics@acornuser.com

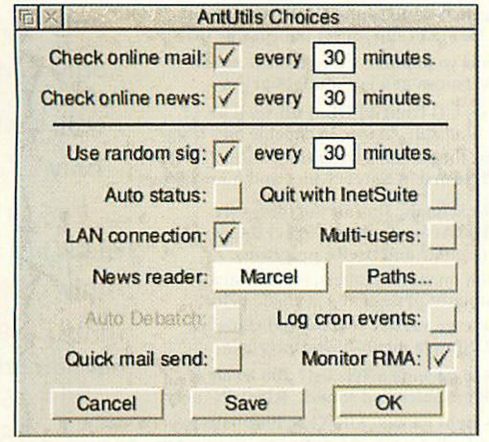

RISCOS
RISCOS
RISCOS
4



Love it or hate it

Ask a group of Acorn users what Internet software they use or would choose, and you'll get a selection of answers that include *!Voyager, !Acornet, !Socketeer, !ArmTCP, !Connect* and the *ANT© Suite*, and there are others. All programs have their idiosyncrasies which their users either love or hate, but some will take steps to improve what they've got.

!AntUtils by Paul Vigay implements useful extra functions for the *ANT Internet Suite* merely hinted at in its manual. Paul is a strenuous defender of the Acorn faith and active crusader in the Anti-Microsoft Campaign. Just try to look at his Interalpha Web site with *Intregret Exploder* and you'll see what I mean.



You takes your choice

!AntUtils' optional extras include automatic periodic mail and news fetching, a random cookie or quote added to the e-mail signature line, and support for users of *!Pluto*, the newsreader by Jonathan Duddington for those who prefer not to use ANT's own *!Marcel* reader. Other task scripts can be run using the built-in Cron timer while *!AntUtils* is running.

A recent addition is the facility to create an HTML thumbnail index of browser-viewable images in a directory. This needs using with care as the resulting page will expect the browser to scale the images to thumbnail size, and may take a long time to render if the pictures are large and/or many.

Paul's Acorn Shareware page is worth a look for a selection of other downloads and utilities. If you share his interest in Unexplained Phenomena, you can explore this award-winning site that reports on some fascinating happenings and theories.

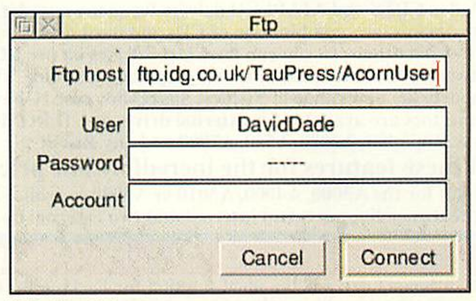
!AntUtils by Paul Vigay
http://www.interalpha.net/customer/pvigay/shareware.html

Freeware fulfilment

One of the acknowledged problems of companies employing professional programmers is how to rate their work against the quality of code produced by enthusiast programmers, who work for personal satisfaction and fulfilment. Whereas commercial operations are usually bound by deadlines and costs, amateur programmers spend time to achieve quality and refinement. This usually results in freeware that performs better in parts than its commercial equivalent that may have more features.

Colin Granville's *!FTPc* is a simple freeware graphical File Transfer Protocol client that is ideal for uploading Web pages to a user's Home Page Web server. Unlike some of the commercial competition, *!FTPc* can upload a whole Web site directory to the Host ISP's Home Pages site in a single drag and drop action. The usual slash-to-dot RISC OS/Unix translation of file names is handled automatically. Single files or selections from the current remote directory can also be up or downloaded.

Although there's no configurable list of sites built-in, *!FTPc* supports the Acorn/ANT© *URI* (Universal Resource Identifier) system which allows you to connect just by double-clicking on a text URI file containing the username, password, hostname and home directory of the FTP site required. You'll need the Acorn *URI* module



FTPc files this page

on the *Acorn User* 200 CD or from http://www.acorn.com/browser/uri/URI.arc. The text format is ftp://username:password@ftpsitename/pathname/ and the URI filetype is &F91.

Colin has incorporated requested features in the still-developing software in response to users' suggestions, resulting in frequent, sometimes daily updates. It's this instant two-way communication that enables freeware authors to score against the professional publishers. You can find the latest version of *!FTPc* at http://www.c-granville.freeserve.co.uk.

Contacting me

Keep sending me interesting URLs for the next yoUR List by e-mail to david@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181 654 2212.

Bleeding web

Dr. Jakob Neilsen has been called the "Guru of Web page usability" by *The New York Times* but "not yet as famous as Elvis" by *CONTENTIOUS* Magazine. His bi-weekly *Alertbox* Web column "Current Issues in Web Usability" will continue to make interesting reading for an estimated 5 million page viewers in 1999.

Articles such as "Top ten *mistakes* of Web design" and "Why frames suck most of the time" show that his views are somewhat controversial. *Alertbox* is recommended reading thanks to our own Acorn-friendly Web guru Derek Moody, an advocate of Web page design which 'degrades gracefully' when viewed on simpler browsers.

Alertbox
http://www.useit.com/alertbox/

HTML sucks

HSC may help you avoid the afore-mentioned ten mistakes by pre-processing your HTML files, performing a basic syntax check, validating local links and setting image size attributes. Style macros can be defined that present a consistent appearance across Web pages. The author, Thomas Aglassinger, stresses that *HSC* is not for the beginner but requires certain skills of the user. He warns that exploring *HSC* could be either uplifting or harrowing, depending on your experience.

The program is ported to RISC OS by Sergio Monesi and Nick Craig-Wood who suggest the use of a filing system that supports long filenames such as *!raFS* or *!LongFiles*.

HSC
http://www.alphawave.ltd.uk/sergio/hsc.html

Engaged tones?

You can hardly move for free ISPs these days. Martin Dawes Communications' *Breathe Net* offers local call 0845 56k and ISDN access, 10Mb free Web space and five e-mail addresses, newsgroups, 50p/min technical support and so on. Web browser accessible voicemail, fax and e-mail boxes are projected, and e-mail will even be spoken to computerless users over the phone.

An Acorn-friendly free Internet service is provided by Richard Chiswell's *BeebWare Internet*. BeebWare offer free technical support, unlimited e-mail addresses, news access and best of all, signup is easy on any Acorn browser. But to avoid the engaged tone on a Sunday evening, I recommend that you pay an ISP.

Breathe Net
http://www.timetobreathe.net/index2.htm

BeebWare Internet
http://www.beebware.com/internet/

3.5" IDE Hard Discs

	Drive	Plus i/face
210 Mb	£39	£81
420 Mb	£49	£87
540 Mb	£59	£107
850 Mb	£65	£112
1.2 Gb	£72	£119
2.1 Gb	£93	£140
2.5 Gb	£97	£144
3.2 Gb	£99	£146
4.2 Gb	£114	£161
5.1 Gb	£117	£163
6.3 Gb	£123	£170
8.2 Gb	£134	£181
10 Gb	£153	£200
12.4 Gb	£189	£236

'Plus i/face' price includes an APDL fast IDE interface.

Part-exchange available if you need a bigger drive. Please phone for prices.

2.5" IDE Hard Discs

	A3020	3010/3000
30 Mb	£36	£79
60 Mb	£49	£92
80 Mb	£56	£99
120 Mb	£63	£106
170 Mb	£72	£119
210 Mb	£79	£122
250 Mb	£84	£127
330 Mb	£94	£137
420 Mb	£99	£145
512 Mb	£120	£170
1.4 Gb	-	£178
2.1 Gb	-	£197

A3010/3000 includes APDL IDE interface, A3020 includes fitting kit

SCSI Hard Discs

210 Mb		£30
420 Mb	h/h	£55
540 Mb		£68
1 Gb		£79
4.2 Gb	h/h	£159
4.2 Gb		£175
8.7 Gb	h/h	£299

'h/h' indicates half-height approx 1½ inches high, others are 1" high.

IDE CD ROM drives

Internal

Drive with all cables and drivers for RO 3.6+ where required

36x	£47
40x	£49

Drive including APDL IDE interface

36x	£94
40x	£96

External

Drive in case with power supply and including an APDL IDE interface. Probably the best way to fit a CD to a pre- RISC-PC machine.

36x	£151

CD ROM driver software

Works with most ATAPI CDs including Goldstar, Panasonic, Lite-on, Mitsumi, Sony, Hitachi, Pioneer, NEC, Toshiba, Sanyo, etc. Includes CDFS so can be used with RISC-OS 3.5. Intended for the RPC but can be used with an A5000.

Only £8 or £7 with a drive

RiscPC and A7000 RAM

8 Mb		£8
16 Mb		£29
32 Mb		£54
32 Mb High Clearance		£62
64 Mb	*from*	£89
128 Mb	*from*	£179
2 Mb VRAM		£69
1 Mb to 2 Mb exchange		£47

Datafile PD CDs

PD CD - 3	£7.50
PD CD - 4	£10.50
PD CD - 5	£7.50

Various games

Emotions	(RPC only)	£14.95
Flying High	(RPC only)	£14.95
Fire and Ice	(not S/Arm)	£8.50
Hero Quest	(not S/Arm)	£7.50
Quest for Gold		£6.00
Starfighter 3000		£10.00
Revelation	(not RPC)	£3.50

Public Domain, Shareware and other low cost hardware and software for Acorn computers










Prices include VAT and UK carriage except hard drives add £5 for internal drives, £8 external

This is only a fraction of what we have available. We also have thousands of discs PD and Shareware and around 500 discs of Acorn format clip art. For a full catalogue on 800K or 1.6Mb disc please send 50p or two 1st class stamps or see our web site.

APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN
Phone: 0181 778 2659 *Fax: 0181 488 0487* www.apdl.co..uk/

APDL Public Domain, Clip Art and other CDs

APDL PD-1 The best PD CD from the best PD library. Over 1,800 programs and utilities, more than 100 novels, etc. No games, clip art, music, or other non-serious stuff — only £12.50

Both for just £22

APDL PD-2 Around 700 games and novelties, over 250 games cheats and over 200 demos, plus over 2,000 music files and more than 550 digitised sound samples. — only £12.50

DTP-1 and DTP-2 Each have over 500Mb of clip art files, all ready to use in Acorn Draw, Sprite or Artworks format. Ideal for use in education. — only £9.90 each

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DTP-1 plus DTP-2 plus DTP-3, just £34.50

DTP-4 Our new clip art CD. Over 12,000 clip art files, plus more than 400 Artworks files and 170 high quality colour pictures. All catalogued and complete with thumbnail images — only £19.50

Games CD 1 A collection of twenty of the best PD games of all types. Ready to run direct from the CD on almost any machine. Hours of fun for an unbeatable price. — only £7.90

Games CD 2 Our Games Collection No. 1 CD was so popular we've done it again. Another twenty of the best best games at a real budget price. — only £7.90

Skullsoft Collection A great budget priced games CD from APDL. Full versions of three popular games from Skullsoft, !Arya, !Xenocide and !Plig — only £9.90

Fantasy Pictures By request from our customers, the pictures from the Fantasy section of the APDL catalogue. Lots of Sword 'n Sorcery pics and many others — only £7.90



A CD from APDL especially for schools. Has all the things we know you want. More than 5,000 Acorn format clip art images, hundreds of e-texts, over 300 popular and useful programs.... — £16.50 — Ten for just £79

Earth in Space Pictures, databases, information on stars, planets, moons, space missions, etc. etc. A massive amount of data at a realistic price. — only £9.90

Earth Data Geographical database with a huge variety of data and statistics on every country in the world. Simple menu-based interface — only £9.90

Wizard Apprentice Have you got what it takes to become a Wizard? 100 levels of this great game with superb graphics and sound. RISC-PC only — new low price £14.95

Generation Design collection New version now has eight games. AlfaXL5, Pharoahs Secret Tombs, Last Cybermoch, Sea Trek, Caves of Confusion, Robocatch, and two new additions, Gold Run and Jewels of Jezabar. Also available on disc. — £16.50

APDL ideA fast IDE interface

- No complicated setting up. It's self-configuring so just plug it in!
- Uses DMA (Direct Memory Access) on Risc PC. Over twice as fast as the built in IDE interface or others which don't use DMA.
- Includes CDFS and ATAPI CD drivers for many popular CD ROMs.
- Four devices, any combination of CDs and hard drives.
- Up to 8 partitions, so you can have large drives on pre RO 3.6 machines
- Software in flash EEPROM for easy update (including VProtect).
- Supports the new range of Syquest SparQ low cost 1Gb removable drives.
- Connectors are available for external drives or CD ROMs
- Fits A310, A400, A5000, A540, A7000 and any RiscPC.

All these features for the incredibly low price of just £52

A version for the A3000, A4000, A3010 or A3020 is available with all the above features. Supports two internal and two external devices - £67

Syquest SparQ 1Gb removable drive

The 1Gb SparQ drive is the ideal solution for backing up larger hard drives where old technology like a Zip drive just isn't realistic. Big enough to hold lots of data, and with our interface, faster than a built-in hard drive on a RiscPC so you can use it as an extra hard disc. Discs are much cheaper than anything of comparable size, just £29. The drive can be fitted in a 3½" or 5¼" drive bay.

SparQ internal IDE drive with APDL fast IDE interface just £199

NEW - APDL printer port Syquest drive

At last you can now have a 1Gb Syquest SparQ printer port drive at a realistic price. Not as fast as the IDE version but you can fit it to any machine with a bi-directional printer port (ie. anything with a hi-density floppy drive) and move it between machines. With Acorn and DOS driver software. just £199

ACE 586 PC cards

Available with 128K cache from just £199 or 512K cache from £299. We can offer a trade in against your old card, which makes it even cheaper. Good performance for Windows at a sensible APDL price.

General software

Faster PC - £20 The alternative XT PC emulator. Works on any model with 2Mb RAM from A3000 to Strong ARM RPC.

PowerBase - £15 Popular extremely powerful but very easy to use database. With examples, tutorials and printed manuals. Better than most products costing many times the price. Does everything that 99% of database users will ever need.

MenuBar - £15 The very best pull-down menu system. An absolute essential for any hard disc user. You can switch between up to 30 different menu bars. Incredibly easy to set up, add items to menus, move them, etc.

Tiger - £15 Lets you use very long descriptive filenames. Unlike some products this is very robust as it works in parallel with the filer so can't corrupt discs.

WorkTop - £15 Switch between up to 30 different environments with a single mouse click. Stars the tasks you require, opens directories, loads files, changes screen mode. Just like moving to another computer. An essential productivity tool.

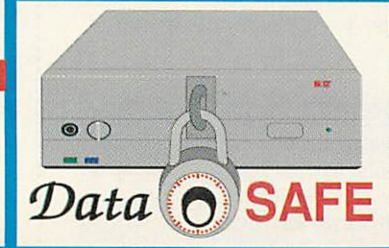
Joy Connect joystick podule

Works with most games. Podule with one joystick £42 Extra joysticks £6 each.

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We have a limited number of these very fast interfaces (up to 7.5 Mb/sec) at only £109

Data Safe - A new concept in backup and data security



A new idea from APDL, Data Safe consists of an external case to hold a 3.5" IDE hard drive, connected to your machine's printer port. This gives a large capacity portable drive, movable between machines and locations. Ideal for backup, secure data storage and transport. The filer has all the features of our ideA card so you can partition drives, password protect partitions, etc. Great for schools. Supply your own drive or we'll fit one for you.

Data Safe *Super* has the drive fitted in a removable drawer. You can fit a similar drawer to your Risc PC (best if you use our IDE card) and then just unplug the drive from the RPC and transfer data to another machine using the Data Safe.

Prices start at £104 or with a 3.2Gb drive from just £199



The future

As one of the more public voices of the PD scene, I've always encouraged Acorn to make use of the wealth of talent and software in the PD world. But other than a few minor moves linked with the Clan, Acorn seems to have wasted the most valuable part of it's computing niche - the owners of it's brand of computers. With such a slow development of the OS over the last few years it's been left very much down to PD authors and a few like-minded commercial developers like Quantum Software, to fill the gaps Acorn left. And despite the difficult circumstances, what a great job they've done of it.

I really didn't appreciate it fully until I accidentally disrupted a vital part of my machine's boot-up sequence, leaving me in a raw desktop with no additional software loaded. Being forced to work without all those short-cuts I'd become so used to was just awful.

Having all these PD programs loaded doesn't cripple my computer with instability even though I usually go on to fill the iconbar up enough to rely heavily on it's sideways scrolling abilities. Using more than about three applications often seems inadvisable on a PC...

Past achievements

In all fairness to Acorn, they deserve credit for creating what is the best windows interface in the world and they certainly introduced the climate of clever time-saving features that the PD world has continued to support. If I'm ever showing a PC user why RISC OS is so good, I always bring up a picture in something like *!Photodesk*, zoom in and then scroll around by dragging one of the window's scroll bars with Adjust (letting me scroll in *any* direction).

There are so many of those fantastic, yet on their own seemingly insignificant features, that it makes such a difference to your work productivity.

Unfortunately Acorn didn't carry on RISC OS development in the inspirational way they started. The people who use Acorn machines, do so because there really is this massive usability difference over Microsoft-drowned PCs. If RISC OS is to continue, it's this ethic that we need to embrace and develop so much further.

RISCOS Ltd

Acorn's failure to capitalise on it's valuable home grown PD talent was just one of the many missed chances in it's history. But we now have the chance to embrace a hands-on, and more importantly, user-driven development of our beloved OS. With the formation of RISCOS Ltd, we really are at a major turning point and the potential of success might just be rather good.

RISCOS Ltd has already appealed for willing parties to contact them with details of their programming abilities and I hope this first step of communication with the authors of the PD scene is indeed not the last. But where should RISCOS Ltd be taking us, and indeed the OS, now?

Much uncertainty currently abounds over RISC OS 4 and when we're finally going to get hold of it, but it seems with RISCOS Ltd at the reins things should be straightened out soon and a release will finally be made. But where will that leave us with the future in mind? A release with not enough for the user at a profitable price? Compatibility problems with applications and PD utilities? These things could all be very damaging at this stage.

Difficult times

Even with the best will in the world, and a commitment to future development, it's going to be difficult for RISCOS Ltd to convince enough users to buy OS4 and stick with it until they're again going to charge us for another set of ROMs. Now, I'm not criticizing what they're attempting to do, and it does seem that selling us what Acorn has put into OS4 really *has* to be the first step, but it's going to be a tricky tightrope to walk.

To make it through these difficult times, RISCOS Ltd has to avoid the mistakes that Acorn made. They must be willing to communicate much more freely with the user-base, and take on board any help that existing coders on the scene can give them. Last year I actively tried to encourage Acorn to incorporate into RISC OS a new GUI-related application I had co-written.

Finding anyone who was actually prepared to reply to my e-mails, never mind talk to me on the phone was really not an easy task. The end result from Acorn was that the person we needed to talk to hadn't been recruited yet. In the end we decided it would simply be easier to release it into the Public Domain. How many other opportunities Acorn missed with this kind of attitude is anyone's guess.

RISCOS Ltd must be prepared to actively go looking at the utilities and applications already available on the scene (and indeed on other platforms) that would benefit from being incorporated into RISC OS.

The danger is that these finer interface issues are going to disappear behind calls for greater technical additions (like virtual memory for example) and all the problems involving compatibility with future processors. At the end of the day we have to remember what it is that makes RISC OS good, and take it further.

I'd love to hear your views on the future of RISC OS and hopefully get a nice discussion going via the PD column. Drop me an e-mail with *your* viewpoint.

Looking good

Paul wrote this column before the RISCOS Ltd meeting on Friday 19th March. Having attended the meeting my mind has been put at ease regarding many of the points he raises. The three very competent programmers seem fully aware of the need to increase or at the least maintain the usability of RISC OS. They have already incorporated a number of PD application ideas into the beta version, and are all using RISC OS 4 on a day-to-day basis without any problems. At the meeting they were extremely open to suggestions and keen to know which PD applications we used and found most useful.

With regards to compatibility, they have thoroughly tested RISC OS 4 with all the software at their disposal and have only found one or two obscure pieces of PD which produce problems. Any compatibility issues will be with future hardware and software, not with current or past products.

The PD scene need not fear that RISCOS Ltd will shut them out. For the first time those people responsible for producing the ROMs we use have the intelligence to listen to PD programmers and the inclination to hardwire their ideas into our operating system. This obviously isn't going to happen every five minutes, no doubt new ROMs will be produced when significant changes occur (like the transfer to a hardware-independent OS) and at these points the best features of PD applications will be considered. In the meantime we shall continue to place them in our *Boot* sequences and make-do.

On a final note, don't expect to see the first version of RISC OS 4 crammed to bursting with radical GUI changes, the three guys only have a short time to de-bug the current version, add their own ideas, and ensure it still maintains RISC OS's reputation as a solid, reliable operating system. Good luck to 'em.

Dunstan Orchard





public domain

FTPc

Before the popularity of the Web, Internet users had to rely quite heavily on FTP to get hold of files off the Net. But with more graphical links for just about everything on the Web most people simply use a browser to get what they want. A File Transfer Protocol client can be quite useful however, especially when you need to upload as well as download, which many users do to their own Web sites.

FTPc goes way beyond the old command line style of file transferring and provides a RISC OS filer type interface to your transfers. It's also well supported and documented with simple explanations for the beginner. *FTPc* can be obtained from http://www.c-granville.freeserve.co.uk

Faster floating

A very useful tool for C programmers is a set of highly optimised, single precision floating point routines from *FQuake* coder Peter Teichman. You can use the set of function calls straight from your own code, allowing time-critical calculations to be called direct or even inlined. This is much faster than using the standard FP operations which take time to be processed via the FPEmulator.

Obviously this is only a short term solution for the FP unit-less among us and it does introduce more work for code porting to other platforms. But full marks to Peter for releasing these valuable routines. Check the code on Arcade BBS.

Coding contest

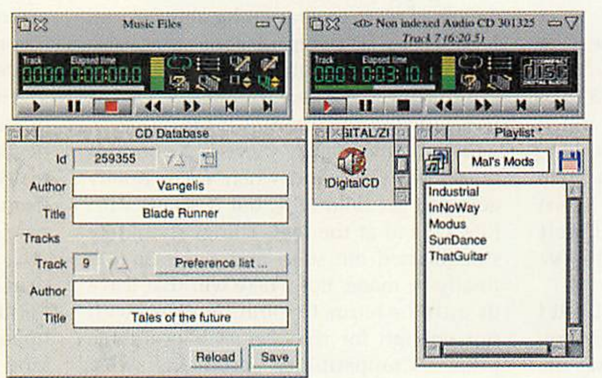
Alan Brobecker is organising a RISC OS coding contest called CodeCraft. Emphasis is placed on small programs; entries should be between 1-4K. Check out the Web site for more details at: http://www.cybercable.tm.fr/~brooby/code.htm

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at Acorn User, Tau Press Ltd, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail (but no large files) to pdpage@acornuser.com

Digital CD

An area where PD support has made up greatly for the lack of original RISC OS functionality is in music controls for your CD player. There are an awful lot of apps out there that do the job really well, but one of the most regularly supported and well developed is *Digital CD* by Andre Timmermans.



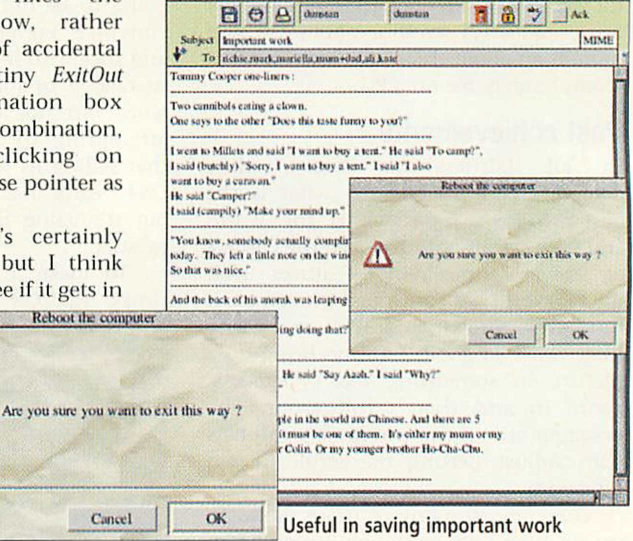
Andre Timmeman's Digital CD

As well as all the usual controls and support for module playing as well as CD control, you've got a complete playlist and CD catalogue. You can even select the funkiest design from a range of control panels. As I've already said, there's plenty of offerings to choose from in this area, and its worth looking around and downloading a few, but Andre's *Digital CD* has to be one of the best. Point your browser to www.geocities.com/siliconvalley/horizon/4471

Don't leave me this way

ExitOut by Justin Fletcher fixes the rather obvious yet until now, rather unfortunate RISC OS problem of accidental presses of Control-Break. The tiny *ExitOut* module brings up a confirmation box when you do hit that fateful key combination, although on my machine, clicking on Cancel seemed to cancel my mouse pointer as well.

Teething troubles apart, it's certainly one for my boot-up sequence, but I think a little more testing is needed to see if it gets in the way when you really do need a Control-Break after a serious crash in the desktop. Get it from http://www.thevillage.ndirect.co.uk/justin/software.html



Useful in saving important work

Top PD

Acorn Arcade are holding a competition for the best PD games running under RISC OS. As AA Editor Tim Fountain describes "Basically we're hoping to get people to tell us their 10 favourite PD games, and we can then compile a league of games, and give 'awards' to the top ones." Interested parties can vote by e-mailing a list of their top 10 games to tim@acornarcade.com or by filling in the form at http://www.acornarcade.com/features/misc/ league/vote.html

Also of PD relevance on the Acorn Arcade pages is the new Coding Vault. The section is a joint venture with VOTI "to try and get coders to finish off abandoned games to which we have the sources." For more information, point your browser to http://www. acornarcade.com/features/codevault

AcornICQ

The latest version of *AcornICQ* is now available from http://www.geocities.com/SiliconValley/Hills/5544 and now from version 0.11 onwards is classed as Charityware. Regular users are encouraged to donate to the Dutch ME fund. If you want to know what ICQ is, visit http://www.mirabilis.com/products/whatisicq.htm



First steps for first timers

Those of you who read the first article in this series back in the March Issue will remember that we were looking at the many advantages of becoming a Computer Contractor. We reached the stage of having prepared a CV and distributed it to a number of the specialist agencies which exist in the IT industry with the aim of bringing contract and contractor together.

Much of the initial contact will be via e-mail and phone. So, first off get an e-mail account, preferably a free one, a modem and some e-mail software. I personally use the *ANT Suite*, not cheap but good. By the way, anything you now buy with a view to setting up a business may be an allowable business expense, so get into the habit of keeping copies of all invoices and VAT receipts. I would also suggest, if you are working, buying a mobile phone. Agencies trying to contact you at work can be a little embarrassing.

You may require some persistence but if your CV does contain a reasonable and marketable skill-set it will eventually be picked up by an agency. Sometimes they will contact you for further details, like preferred location and required pay rate. You need to think about the answer to both questions very carefully and not be caught on the hop by a recruitment consultant on the phone.

Let's think about location – obviously the nearer to home the more convenient in most cases. However, as a contractor it does not always work that way – you have to go to where the work is and that could be a considerable distance. If you are not prepared for this eventuality then contracting is unlikely to be the work for you. Obviously if you are prepared to work away from home then it will need to be reflected in the rate you expect.

An increasing trend is for British IT contractors to work abroad – if you have any language skills as well as IT skills you will be at a premium, especially with French or German, but English is pretty much a universal language. The present honey-pot for IT contractors is the Republic of Ireland who are leading the way in the first wave of the Euro/EMU countries.

The rate is usually expressed in terms of pounds per hour. You will be paid for the hours you work, usually around 37 hours per week. Any overtime is usually pro-rata but if you are expected to work longer or more unsocial hours you may like to negotiate additional payments. Beware (do not touch with a barge pole) any contract which states you will only be paid overtime after some qualifying time, for example: after 37 hours you will be paid overtime if the time is greater than six hours. I have seen such contracts and they are a method of getting five and a half hours of unpaid time out of you.

The agency may suggest a rate but it is better if you have a fairly solid idea of what you can afford to work for. I use a simple rule of thumb. Let's say you are in full-time employment and earning £20,000 per annum in salary. Now try to quantify what the benefits (company car, mobile, pension and so on) add up to in total. I would guess not far outside the range of £5000 to £10,000 if the company car is fully financed. This gives us a range of £25,000 to £30,000.

If the rate being offered does not allow you to earn or have the potential to earn that amount of money then it is not worth giving up the full-time job. A bit of simple arithmetic gives us a rate of about £18 per hour based on a 37 hours week and working 48 weeks per year with no overtime. You may think the difference is not that great given the insecurity of contracting but more of that money should be yours to control if you set the company up in the most tax efficient way.

You may also be prepared to take a little less for your first contract depending on the experience it offers you and its length. A six month contract at £17 per hour is probably a better prospect than a three month contract at £18 per hour.

You do not have to take my word for this and I would strongly suggest you contact any of the accounting companies or contracting agencies specialising in what are called First Timers, that is those considering going into the contracting market for the first time. Good sources of information include the two main weekly IT newspapers *Computing Weekly* and *Computing* and the various Internet Web sites containing guides for First Timers. Obviously you can contact me at bizniz@acornuser.com and I will try to answer any specific queries you have, but be please be patient.

In the next article we will cover setting-up a company, accounting, book-keeping and the dreaded VAT.

A message from Holland

We are pleased to announce the formation of a new RISC OS based company.

It is called Ottens' Dutch Designs, O'dd. We are a new design house using the RISC OS platform for designing. We are two Dutch brothers who have been with the Acorn computer for more than ten years and do have several years of designing experience. We are convinced of the quality of the RISC OS platform for designing.

If you want more information about O'dd or want to contact us drop an e-mail or send a letter to:

M.M. Ottens, Ottens' Dutch Designs, Stationsweg 9, 5211 TV 's Hertogenbosch, The Netherlands.

M.M. Ottens +31-736 135 050 (Maarten)
S.M. Ottens +31-317 422 607 (Steven)
Steven M. Ottens – steveno@lx.student.wau.nl
http://www.futuretrain.com/odd

A salutary tale

Have I told you the one about the Joe Muggins who bought a PC from a leading High Street retailer which was not as advertised or fit for the purpose as specified? Have I told you about the aforementioned retailer who appears never to have heard of the Sale of Goods Act or the Finance Company who appear never to have heard of the Consumer Credit Act? No? – well by the time you read this I should have had the pair of them in court so I will tell you about it sometime.

In the meantime those of you thinking of purchasing a PC rather than an Acorn just ask yourself the question – when did you ever need to take an Acorn retailer or dealer to court and when did they ever misrepresent goods to you? It's a tough old world out there in PC land and we do not realise how much we all benefit from being part of a small but perfectly formed community rather than just being seen as saps to be parted from their money. Support your local Acorn dealer is what I say and I will see the PC vendor in court.

Printer drivers

The printer market is hardly static and with the demise of Acorn many of you have asked where up-to-date printer drivers are going to be available from. The answer is that we are unlikely ever to have new drivers for all new printers. Therefore I would strongly suggest buying an Acorn driver before or at the same time as buying a printer. That way you can be sure that a driver exists before being left with a new printer for which no Acorn driver exists or will ever exist.

In the meantime ExpLAN Computer Ltd have made drivers available for the Canon BJC-7100 with the printer. If any developers of such drivers for new printers would like to contact me at this page I will ensure that they are mentioned.

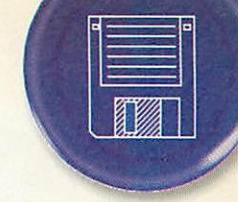
ExpLAN, tel: 01822 613869; fax: 01822 610868; e-mail: explan@explan.demon.co.uk; Web: http://www.explan.demon.co.uk/

Wakefield show '99

As you should be reading this before the Wakefield Show '99 (15/16th May) I thought you might like to know that I will be at the show on the *Acorn User* stand on one of the days, so please pop along and say hello if you get the chance.

Contacting me

You can contact me, Mike Tomkinson, by post at the usual Acorn User address or by dropping me an e-mail at: bizniz@acornuser.com



Not everything is...

!B_and_W by Peter Kingsbury ('96) is a simple drawfile changer. It's main use is to take a drawfile and convert it to light grey for use as a background in DTP, however I've also found it's monochrome colour features very effective. With so many possible combinations of colours and fades it's worth playing around with this program before deciding on your final choice of graphic.

The main window is split into two parts (see right); on the left is the Control Panel and on the right is a display of the file loaded. This display can be accessed by clicking on the icon in the top right-hand corner of the window.

A word of warning here, this version does seem to have a file size limit. The Mini processed well enough, but when the window was extended to display the file *!B_and_W* locked up (press Alt+Break if this happens), but don't worry this will be fixed for next month's cover disc. Other smaller files produced no such errors.

There are three functions that can be performed on the file:

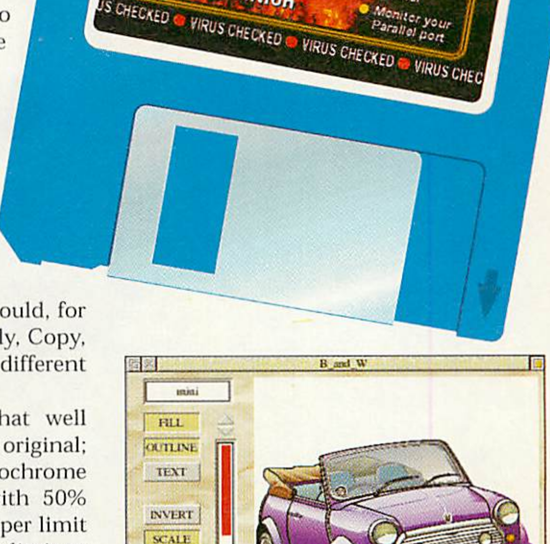
- Scale – maps the colours onto the scale shown. The upper and lower limits of this scale can be altered by clicking on the scale itself or on the arrows top and bottom. For light grey, put the upper limit at the top and the lower limit about half the way up.
- Invert – inverts the colours
- Mono – makes the picture monochrome. The colour for the monochrome picture is set from the main menu 'Monochrome' option.

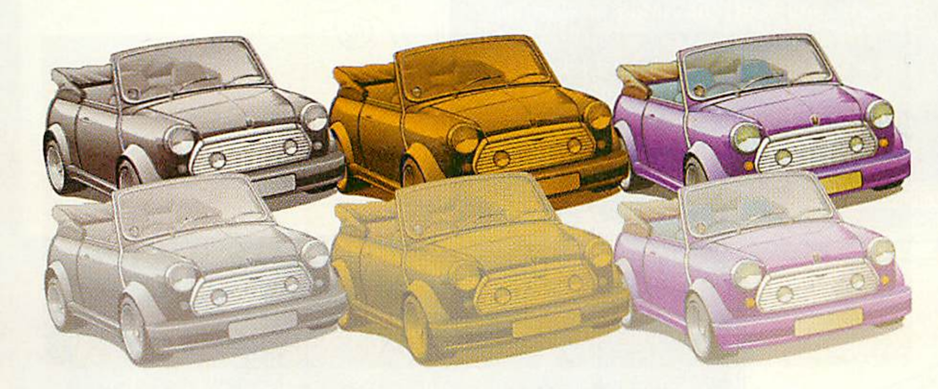
These functions can be applied to any or all of the fill colours, the outline colours and/or the text.

Having selected the functions and the objects to which they are to be applied, click on the 'Process' button. The display should show the altered picture (the original is unaltered by this operation). 'Copy' makes the altered picture the original so that you could, for example, alter the fill colours only, Copy, and then alter the outlines in a different way.

The picture below shows that well known Mini in three stages – the original; monochrome orange; and monochrome black. Below each is a copy with 50% 'Scale' or fade on. For this the upper limit was set to the top and the lower limit to roughly half way (see right).

!B_and_W is not intended to be comprehensive. It is a simple utility designed for one purpose which has been extended to include some others. Good little program I think.





Any1There?

This utility by Chris Flynn (age 13) sits on the icon-bar waiting for the parallel port state to change. Chris says "It saves you having to look at the printer's LED. This has been a project for me for about two years because my dad always leaves the printer on overnight and blames me.

"It should be able to be used on any printer (I think) and you could even change the sprites if you've got something else connected to the printer port, for example Zip drive, sound recorders, MIDI interface and so on. It tells you everything from the iconbar, just a quick glance away."

Unfortunately, Chris has had to set the compatibility limit at RISC OS 3.0 as help menus aren't supported below this. If this really bothers you, he suggests changing the 300 at the beginning of the file to 200, although he hasn't tested this. Anyone interested in an updated version of *!Any1There* should write to Chris.

Disc information

The software on the cover disc has been compressed using !ArcFS 2 from VTi, and are opened by running a copy of ArcFS then double-clicking on the archive to open it. There is a copy of !ArcFS on each disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH*. If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover discs have been checked for viruses using !Killer version 3.001 from Pineapple Software.

Regulars & Features

- **Doom level designer**
- **ProCAD+ specifications**
- **Final Java tutorial files**
- **All the *INFO and RTR programs**



Simon Anthony combines work with... more work, to put this new release under the microscope

Back in 1994 David Snell created a professional Computer Aided Drawing package for Minerva Software called *!ProCAD*. Now, in 1999 he has updated his product and called the new version *!ProCAD* plus – but it's a bit more complicated than that. At these times of great change in the Acorn/RISC OS world it is a brave man who will spend time and money on a massive upgrade task such as this – unless that is there is a very good reason to do so. In this case there is.

!ProCAD has a large and influential user base which has been growing ever since the mid '90s and there is no reason to think that it will stop now just because the company which used to make the computer which runs their CAD package has ridden off in to the sunset. Too much time and money has been spent – and saved – by many industrial Acorn users for *!ProCAD* to be switched for something else now.

It's not just large firms who can use *!ProCAD*, anyone can as long as their machine has at least 4Mb of RAM, RISC OS 3.1 or better and a harddrive – so that is most of us outside primary schools.

So what is it about *!ProCAD* which has kept industry using it and how has it been improved for the next millennium?

What you get

!ProCAD+ comes as a two disc pack with a loose leaf manual in a smart white plastic A5 ring binder. The software is not protected in any way and so there are no installation procedures to follow and none of the subsequent dangers of mucking anything up in your first mad dash to get it going. This shows commendable faith in human nature, but beware all you possible pirates as each copy is individually traceable.

The two discs also hold sample drawings, a symbol library, some documentation and an apparently full feature plotter driver application (which I can say little about as I don't have a plotter).

What you see

Any technical drawing package worth its salt must provide at least a basic set of drafting facilities. This review will neither list nor describe these as the manual which came with the earlier product ran to 210 pages and was not a CAD tutor so there's no space here to do that job either.

There is a text file list of features on the cover disc though. The new manual has just 176 pages – and here is the first clear improvement in Plus as the new manual is much easier to read and even though it is shorter it covers more detail than before. It can almost be used as a CAD tutor if you need one.

xA better read for the beginner is the Quick Start guide which is now available from the *!ProCAD* web site and will form part of the finished package. Please read it – and the manual, indeed from time to time go back and re-read all your manuals as there will always be something new for you to learn even in a package which you use every day – maybe especially then.

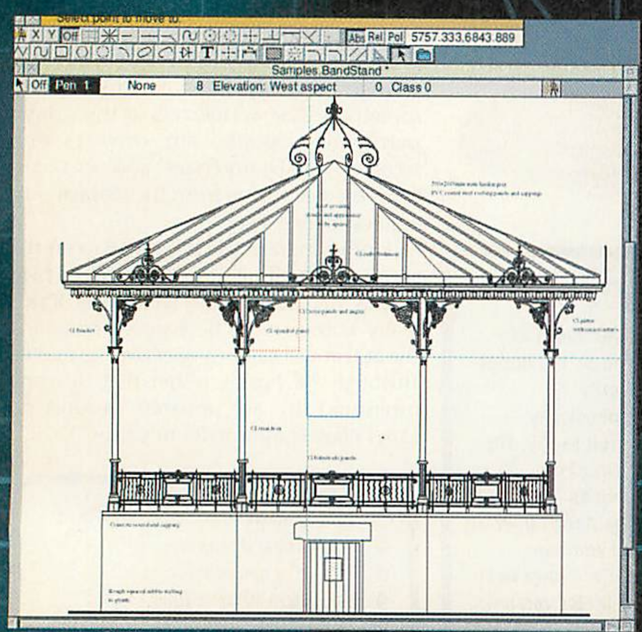


Fig I: One of the supplied demo files

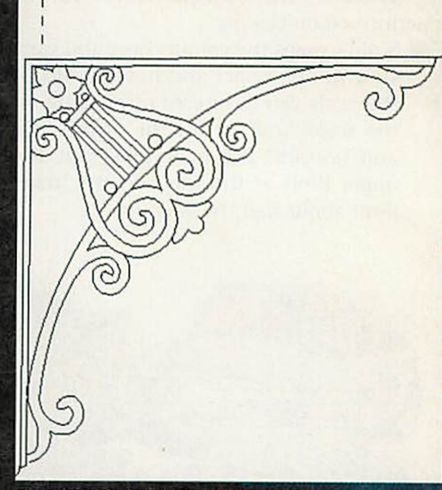


Fig II: Highlighted detail from Figure I

It is very easy to get in to habits which are not necessarily the best way to do things, a quick glance at the manual often shows you a quicker and better way. During the review process for this article the staff here at Electronic Control Services kept finding new facilities in Plus which turned out after a look at the manual to have been in the old version too.

This shows the next important aspect of Plus, that it is both a new product (with a version number reset to 1.00) and an upgrade. Any existing user will be able to transfer at once to Plus and not even notice the change until they look closely at the toolbars. All the short-cuts remain and the way of working can be the same. The total re-

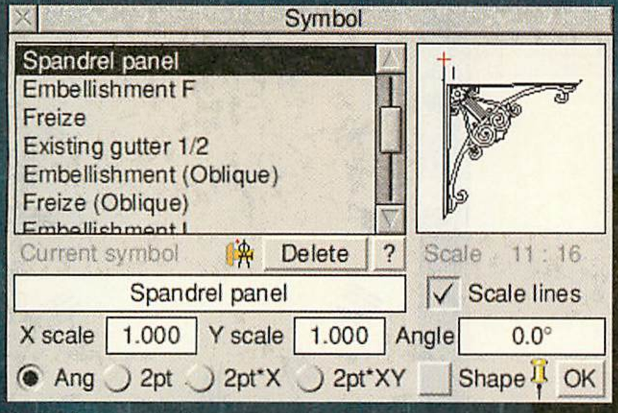


Fig III: The symbols directory

work is under the bonnet.

Support

!ProCAD was never particularly buggy but any package can't really be said to ever be perfect, all the known faults have been removed in Plus and so stability can be considered the same if not better than before, and 'before' was good or it would not have lasted this long. Any new faults which may crop up can be fixed almost by return of e-mail if the bug report is detailed enough.

Good and continued support exists for this product which can be expected to carry on for a long time. A continually updated web site carries FAQs, Hints and Tips and anything else which users ask for. At the time of writing this is all at an early stage but it shows good promise.

!ProCAD+ at work

Figure I shows one of the supplied demo files displayed in Plus. This is a real-world drawing of the Hathersage Bandstand as provided by AED Limited. I have highlighted a detail using a method with which any user of *!Draw* will be familiar, Figure II shows the expanded detail in its full glory. In this case the object is held as a *!ProCAD+* Symbol, Figure III shows that there can be a lot of them.

Defining repeated details such as symbols keeps the memory down and speeds up the drawing process considerably. The user is not limited to any preset selection of symbols, although many are provided such as those needed for electrical design work, PCB and OS Map making and so on.

New symbols can be created with ease and added to the list. Figure IV shows one I made by taking the detail selected from the bandstand apart, deleting sections of it, re-grouping the remains and then using an inbuilt facility to turn the group back into a symbol. A very simple process.

Once a symbol has been created it can be used at any scale rotation or aspect ratio. In the bandstand example this detail has been displayed at a reduced X scale (of 0.707) to get a side-on view effect. The symbol left in the pool retains its engineering drawing accuracy as the symbol itself has not been altered.

Figure V shows *!ProCAD* being used in another real-world situation. Just because the application can be highly accurate does not mean that it has always got to be used that way, for example this drawing is not to scale.

Each job type though can already be set up automatically with files loaded and windows positioned in just the right places by using an Obey file generated by the application. Running this file will restore *!ProCAD* to the state it was in when the obey file was generated.

Another new feature of *!ProCAD+* provides the facility of a Control+Tab tap to zoom a selected object to fill the window as in Figure VI where the logo has been un-grouped from the rest of a master template file. Control+R will revert to the previous view. This is a very powerful system which can save multiple clicks and hence considerable time once you get out of what ever habit you use to perform the same task at the moment.

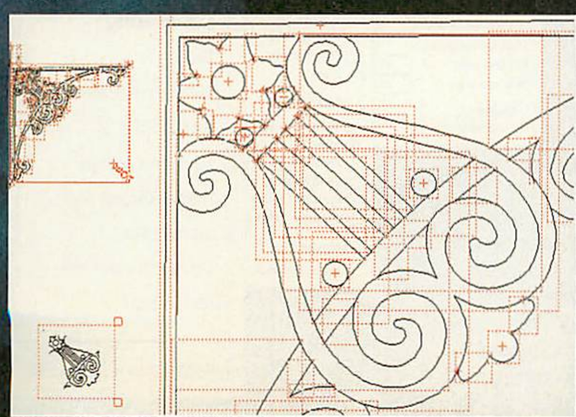
At the time of writing this review the Quick Start manual-ette was being printed. This introduces new users to the wonders of CAD from the ground up and lets you in to *!ProCAD* in as painless a fashion as possible. Part of this introduction covers aspects of the tutor files available from the Web site. I created the simple clock face in Figure VII using roman numerals in just a few minutes following one of these web site tutor files.

A text help file there shows a staggering list of over 900 (yes nine hundred) key short-cuts. Fortunately only a few of these are accessible via the keyboard, the others are 'internal' but it gives a good idea of the number of facilities available. If, among all that lot, you still can't find what you want you can add your own, on top of that many of the others can be redefined to your taste. You can create Macros of these by listing sequences of hot key definitions in a Key Defs files placed inside the applications directory. This way often repeated processes can be assigned to one single button.

The term 'Preferences' gets taken to a higher than normal level as Figures VIII to X show, the daunting facilities here almost let you re-design the way it all works. These figures show three views of the same preferences window. I couldn't get my screen big enough to show the full contents all at once.

Figure X shows the technique used by David Snell for making sure the settings can be saved no matter what the size of the window. The bottom of the window has a pane attached which stays put as the view above changes. The way I took the pictures cut it from the other two figures.

Any menu entry followed by an ellipsis will open other windows of the style described above in several places in *!ProCAD*. For example Figure XI shows a


Fig IV: Creating a new symbol

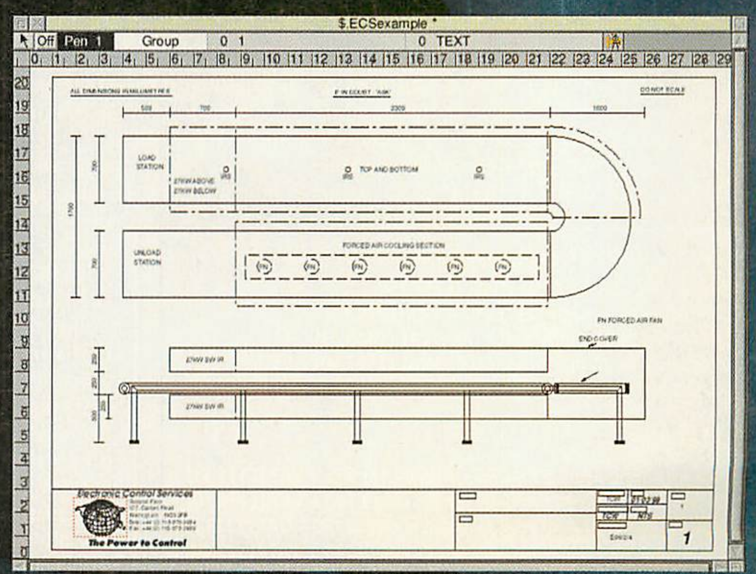


Fig V: Not all drawings have to be to scale

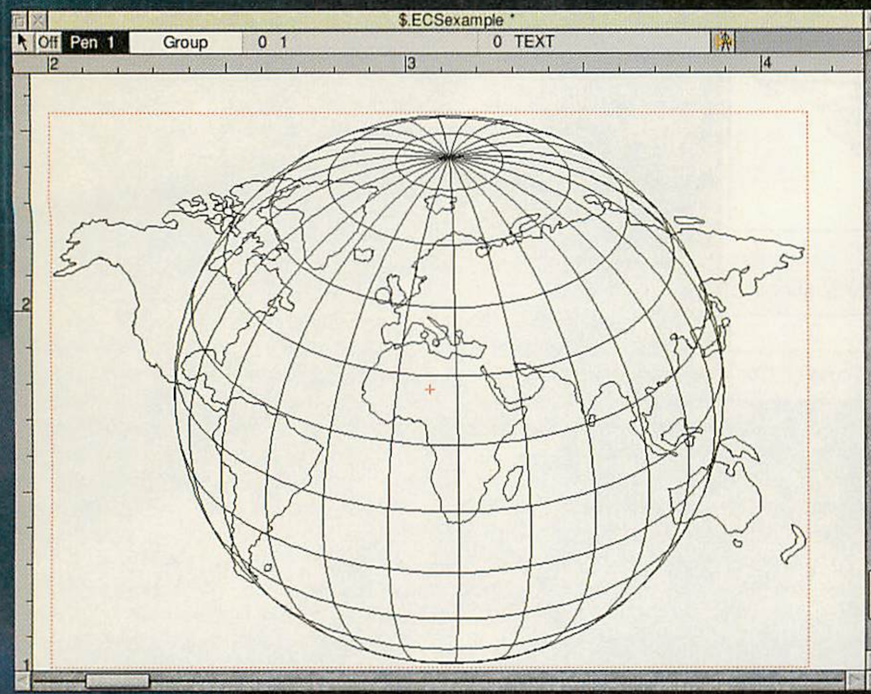
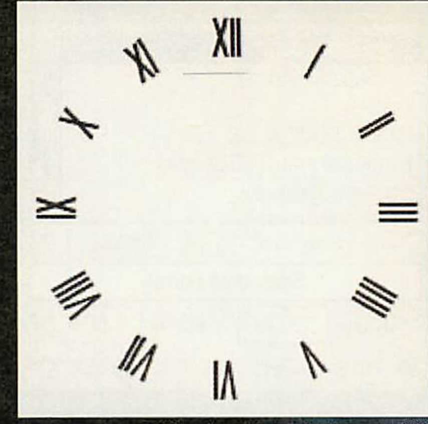


Fig VI: Zooming in is simple


Fig VII: Created following the Web site tutorial

demo CAD file underneath the main menu which is itself shown leading to the new Layer manipulation window. The last incarnation of *!ProCAD* showed all possible 32 layers at once irrespective of their being in use. Now the window only shows the currently relevant information.

This cuts down on screen clutter and also on possible mistakes as editing with multiple levels can get confusing – there can be up to 256 of them within *!ProCAD+*. The Text Classes window has also been tidied up in this way since *!ProCAD* first came out.

Acorns in the real world

!ProCAD has always done just about everything one could want of it. It is currently being used by Zeus Engineering of Exeter who are an automotive design company and Highpath Engineering of Ceredigion – both of whom are happy to let the world know.

I have heard tales of companies who have used Acorn/RISC OS equipment in the past but who removed the computers after the fact that they were not using the 'industry standard' systems was made public knowledge. Once the dust has settled Acorns tend to creep back in to the factory floor and back in to use as their PC replacements just can't cut the mustard. After all, it's only on merit that Acorns were used in the first place.

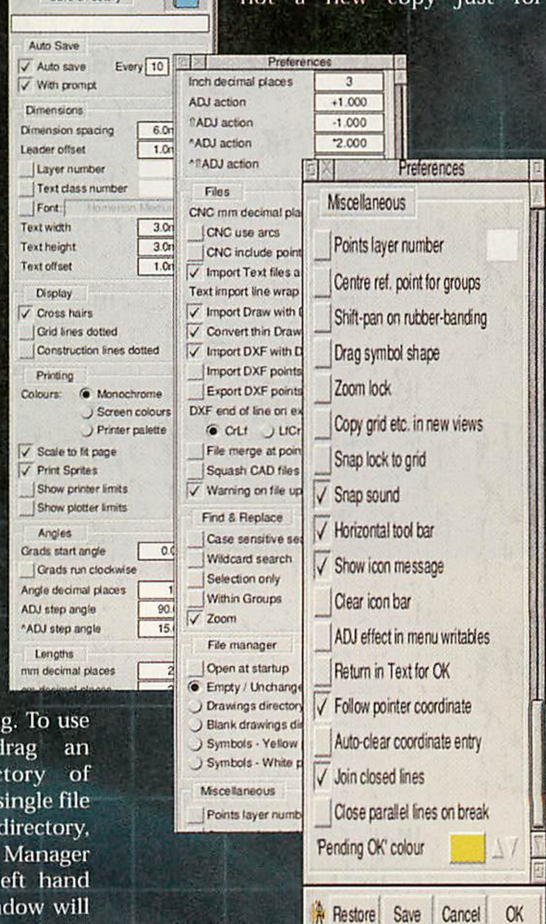
I must congratulate these and other companies for sticking to equipment which they know works well and does the job they need doing.

The big changes

So far I have only really covered cosmetic changes and other wrinkle removing. On the larger scale of changes there is a new way of handling files. The 'File Manager' as shown in Figure XII keeps track of all *!ProCAD's* files in a way which makes them easily available from wherever they are without you having to move them about.

This way you get the advantages of the RISC OS filer plus being able to get to any file you need without undue searching. To use it, simply drag an existing directory of CAD files, or a single file from a CAD directory, on to the File Manager window. The left hand side of the window will list all the files in the directory and a thumbnail of the current file will be shown at the other side when you select one of them. Details of the currently selected file are shown in the middle. Drag the file from the left hand list on to a *!ProCAD* Drawing window to load it.

It is important to note here that the contents of the File Manager are the same as the normal RISC OS file window and hence of the hard drive itself. Anything you do to files in File Manager you will also do to the ones on the disc – because they are the same files just shown in a different window – not a new copy just for



Figs VIII, IX and X: A very large preferences menu

Product prices (see also special offer in text)

Single user licence: £250 + VAT (£293.75)
Licence up to 5 machines: £315 + VAT (£370.13)
Licence up to 10 machines: £375 + VAT (£440.63)
Licence up to 20 machines: £500 + VAT (£587.50)
For more than 20 machines on one site please e-mail for quote.

Upgrades

ProCAD single user to ProCAD+ single user £95 + VAT (£111.63)
CADet single user to ProCAD+ single user £140 + VAT (£164.50)
ProCAD site license to ProCAD+ site license £190 + VAT (£223.25)
CADet site license to ProCAD+ site license £280 + VAT (£329.00)
Prices include UK mainland postage

!ProCAD. You may have seen this sort of thing before when using the Computer Concepts compression filing system, for example where a filing window for a hard drive can be opened as either *ADFS::4.$* or as *ADFS::HardDriveName.$* (or *CFS#ADFS::...*) and both/all versions of the window can be open and on screen at once.

Although this does not happen often it is handy to know what's going on if it does. The trick to avoid wiping valuable files is to look at the path name at the top of the filer window to see exactly what it is you are looking at in the window. The same trick therefore applies for the *!ProCAD* File Manager.

Saving

Files can be saved in many formats including the 'industry standard' DXF. Data files can be produced which will also drive CNC machines. The CAD files can be set to save as Squashed versions which will load directly if dropped on the window or iconbar icon – thus saving disc space.

Isometric projections have always been tricky to do well, they can now be made very quickly from any existing 2D drawing. Group your target objects then copy the group using an isometric transformation function from a subsection of the copy menu, then, assuming you know how to use isometric projections correctly the job is done.

Upgrading

Long time users of *!ProCAD* may need a bit of convincing to go for the upgrade as it works so well as it is. The new features – as powerful and well thought out though they are, still make the upgrade price of £95 feel a bit steep. New users though are getting a splendid product for their money and will soon wish they had forked out earlier. Good news here though as for a limited time David Snell will offer a 10% reduction for *Acorn User* readers. The offer applies to new sales of the full package only and will last until 31st July 1999. Readers must telephone 01392 214033 and quote AU+ to get the discount.

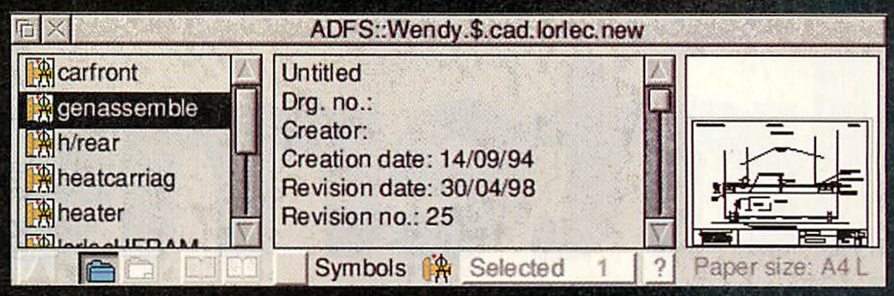


Fig XII: ProCAD's file manager

If you choose to upgrade then there are a few points to make about the file transfer process. Do not fall in to the trap of running both old and new versions at the same time as they do tend to look very similar when both have toolbars and windows on screen. It is easy to use the wrong set. It is not necessary anyway as Plus loads files from the previous version with no trouble – but it does convert them to the new format and so they will no longer load back in to the old version once they have been saved.

It is probably a good idea to make a new directory and fill it with new copies of your old files for use with the Plus version. That way you automatically have a set of backups (which you should have anyway) but also if you need to revert to the old program for some reason then you still can use your old files.

As easy as it is to use, the complexities of such a massive application could convince users of the previous version that going to the new one may be too much of a culture shock. From the experience of using Plus in our office these minor problems can be over come quite quickly and the effort is well worth it.

Another point to bear in mind is that *!ProCAD* is sold with either a single user or a site licence. As mentioned there is no copy protection on the product so there is no difference in software terms between the products. However you are legally and morally required to purchase the site licence version if you wish to run it on more than one machine at a time.

You can test drive the product if you have an internet connection by going to *http://www.zynet.co.uk/dsnell* and if you've not yet bitten the internet bullet then the demo can be had by post from the author. Call 01392 214033 and a 1.6Mb disc will be sent free of charge. (An 800K disc is also available but only contains part of the demo.) This postal offer applies to the UK mainland only. The demo copy is in all respects complete – except that it won't save.

For prices current at time of going to press – and to see a full list of *!ProCAD's* old and new features please see the files on the cover disc.

!ProCAD+ is not a Minerva product but will be available from Minerva as well as directly from the author. The upgrade includes a new manual and 90 days support from the author himself. AU

Fig XI: Layers at work

Product details

Product:	!ProCAD+
Supplier:	David Snell, 35 Wrefords Close, Cowley Park, Exeter. EX4 5AY
Tel:	+44 (0) 1392 214 033
Fax:	+44 (0) 1392 496 599
Upgrades:	Minerva Software, Minerva House, Baring Crescent, Exeter, EX1 1TL
Tel:	+44 (0) 1392 437756
Fax:	+44 (0) 1392 421762
	The demo disc can be obtained by phoning 01392 214033 or by pointing your browser at http://www.zynet.co.uk/dsnell/

Internet



John Pettigrew sees whether *!HTMLPro* is all it could be

HTML Pro* is a new add-on for *!OvationPro* that gives the ability to convert *!OvationPro* documents into HTML, ready for publishing them on the WWW. Levens Software have chosen to enter a demanding area with this product, especially given the difficulty of the task. The question is, how well does this product perform at its stated goal – turning *!OvationPro* into a web-design tool?

What is HTML?

HTML is the language used to define how a page on the WWW will be presented to the user. Originally, this language was very simple but, over time, it has become more complex as authors and designers have demanded more control over the way their pages appear.

There are two basic approaches to producing HTML. One group of people (of whom I am one) perform their mark-up by hand, inserting the HTML tags in a text editor such as *!Zap*. The other group prefer to design visually, laying their page out so that it looks the way they want and trusting the software to convert their design into HTML that will appear the same on as many browsers as possible.

The advantages of a visual approach are that the designer can move elements around more easily, just as you would move frames in a DTP program, and that it allows the designer to create web pages without learning any HTML. Unfortunately, this path is fraught with difficulties, because HTML is not designed to operate in the same way as DTP software, and was never intended to be WYSIWYG.

First impressions

The software comes on a single floppy disk, with an attractive manual. Installation is simple, although there are some odd aspects – should it really be necessary for the installer to be told where the System folder is? On installation, a file is created containing the user's registration details, which can be e-mailed to Levens. The package itself consists of two parts: the *!HTMLPro* application, which performs the translation from *!OvationPro* to HTML, and *HTMLinks*, an applet for *!OvationPro* that inserts hyperlinks.

On running, *!HTMLPro* installs to the iconbar. To convert a file, simply drag it to the icon and, once *!HTMLPro* has finished its import, the main window appears (Figure I). This is, unfortunately, a little daunting owing to the number of options that are available. To save the HTML file, however, you simply name your file and drag, and *!HTMLPro* will create the HTML and also convert the graphics into web format (GIF or JPEG).

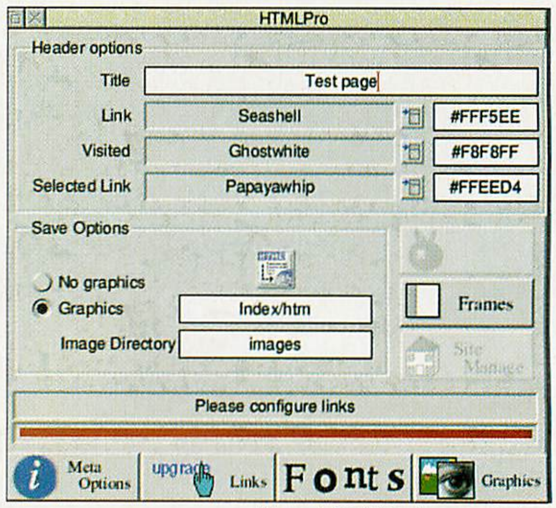


Figure I: !HTMLPro's save window

● **HTMLinks applet** – This is designed to insert hyperlinks into your document, after all a web page will not be much without links to other pages. You can insert either a hyperlink to another document or a marker within this document; the latter option allows links to be made within a page – for example, to the different section headings of an article.

With either option, the details of your link are entered into a dialogue box (Figure II). The link itself appears as 1-point text around the area you have selected. This text is too small to see but is stripped out of the document by *!HTMLPro* when it converts it.

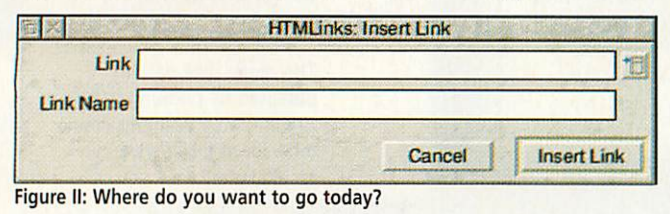


Figure II: Where do you want to go today?

The dialogue boxes are an area to which more care should have been paid. For example, Tab does not move from one icon to the next, nor does Return close the window. Having continually to move from mouse to keyboard is rather annoying.

● **Meta tags** – These contain information about a document but are not displayed by the browser and can include the author's name, a description of the page and a set of keywords. They are often used by search engines when trying to catalogue your page so it is worth using them properly. *!HTMLPro* allows control over which meta tags are included in your HTML file, and what their content is.

● **Graphics** – Each of the graphics in the page can be examined and various attributes altered. For example, you can set the alt text (which will be displayed if the reader has images turned off in their browser) and control whether the image will be saved as a GIF or a JPEG, whether GIFs are interlaced and the quality of the JPEG images.

● **Fonts** – The use of named fonts in web pages is becoming more and more common, but is especially problematic for

RISC OS users because we do not use the same fonts as our cousins in the PC or Mac worlds. However, there is basic control over fonts offered in *!HTMLPro*, in that each font in the document can be defined as a normal (where each letter is a different width) or typed (where each letter is the same width, as in Corpus).

- **Frames** – *!HTMLPro* allows the use of frames in a rudimentary way: a page can be defined as containing two frames, each with a separate HTML file, and frame sets can be built up by making the files within a frame contain two more frames. This is not an ideal approach but it is probably inevitable because *!OvationPro* has no concept equivalent to WWW frames.
- **Links** – I can't comment on this feature, because it crashed consistently when I tried to use it in my latest review copy (and, although it didn't crash in the original version, I still couldn't work out what it was supposed to do). It appears that the aim is to permit links to be customized but I can't see what use this would be outside the document – these features would be better included in the *HTMLinks* applet.
- **Output** – As a test, I tried using some of the sample files that come with *!OvationPro* as well as my own files, using a variety of features that may or may not be supported by *!HTMLPro*. The results varied from almost completely faithful conversion to crashes. Figures III and IV show the *!OvationPro* and WWW versions of the same file.

!HTMLPro achieves its ends by making extensive use of tables. It creates cells for each part of the file to ensure that each is correctly positioned. However, it can only do this by forcing the width of the page to a specific number of pixels. Thus, if someone is reading the page at a narrower width, they will not see all of the text (Figure IV). Also, not all browsers support tables, and so they will fail to display anything intelligent when faced with this sort of output.

There is, it should be said, nothing wrong in using tables, but there should be an option to save the page without them, even at the expense of control over the layout. At the moment, this is only possible by saving a 'local' DDL file from *!OvationPro* (that is, a file containing only the contents of one frame), and this does not allow the inclusion of graphics.

There are some problems: some images vanish (e.g. the swash below the address in Figure III), font translation means that some characters will not display properly (for example, the telephone symbol, although it's not *!HTMLPro*'s fault that font names differ between platforms and so cannot be supported fully), active fields are not displayed (such as the date in Figure III, although this would be extremely hard to implement) and entity handling is poor (special character such as &, <, > and smart quotes should be referred to by name but *!HTMLPro* uses the ASCII code, which will not work on all platforms).

Figure III: The original !OvationPro document

Hot off the press

After this review was written, a new version (1.31) of *!HTMLPro* has been released. This addresses some of the criticisms mentioned in the article – for example, the windows are less cluttered and daunting, some bugs have been fixed, and entity handling is now correct (although, for some reason, the & symbol is still not handled correctly as &). There are also some new features, such as control over background images.

However, there are still problems with stability and with link handling (I still have no idea what the links database is for because, even though it now works, the contents are not available to the HTMLinks applet). Levens Software are updating their product continuously and this latest version means that I can moderate some of my criticisms of it, but there is still some way to go before this becomes a great product.

Overall

!HTMLPro attempts an extremely difficult task – translating from a DTP paradigm into the WWW paradigm. Within its limitations, it does a good job: the text and graphics are easily converted, with the graphics automatically being linked to, and the layout of the page is preserved.

If you want to go to the minimum of effort to create pages that can be viewed by people with the latest browsers (many older browsers, especially in the Acorn market, do not handle tables well), then *!HTMLPro* may be for you.

But, the approach taken to producing the HTML means that there will always be problems. Those who object to tables will not be likely to use *!HTMLPro*, and the incorrect use of entities means that any non-standard character may not display correctly on other computers. The design problems in the program itself (daunting interface, unfriendly dialogue boxes, lack of explanations, crashes on loading or saving files) mean that it also can't be wholeheartedly be recommended to the beginner.

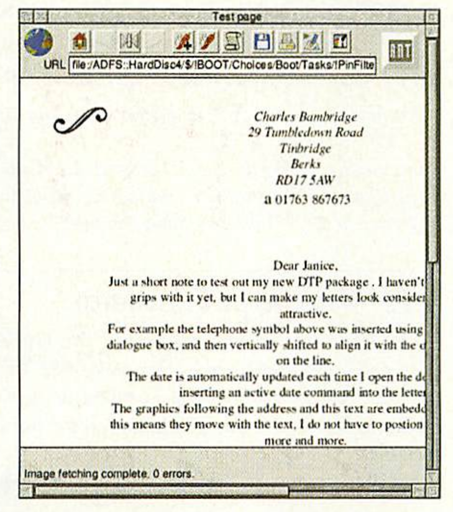


Figure IV: Ready for the Web?

It should be said that *!HTMLPro* is undergoing continuing development, and the problems highlighted here may be solved before this review appears. However, there are many small niggles that really should have been sorted already and it is definitely too unstable.

If you want to create web pages without learning HTML and already own *!OvationPro*, then *!HTMLPro* may be worth buying. Otherwise, there are better ways to get the job done. AU

Product details

Product:	**HTMLPro**
Price:	**£40 plus p&p**
Supplier:	**Levens, Kable House, Amber Drive, Langley Mill, Nottingham. NG16 4BE**
Tel/fax:	**0500 121 242/0500 131 288**
E-mail:	**levens@levens.co.uk**
Web:	**www.levens.co.uk/software**

Mark Moxon finishes his series on RISC OS Java programming with a look at keyboards and mice.

Life, the universe and Java

PART 6

Last month we briefly mentioned strings, but they're such an important tool in programming that they're worth looking at in a bit more detail before we get stuck into our two main topics this month, the mouse and the keyboard.

String handling

Strings are not built into Java as one of the primitive types. The primitive types are fundamental to Java and have types that don't start with capital letters; they aren't classes, they're part of Java itself, like the **new** command or the **if** statement. Although we've been using them happily without really talking about them, now is as good a time as any to list them.

- **Bytes** (8 bits): declared with the **byte** keyword;
- **Short integers** (16 bits): declared with the **short** keyword;
- **Integers** (32 bits): declared with the **int** keyword;
- **Long integers** (64 bits): declared with the **long** keyword;
- **Floating point numbers** (32 bits): declared with the **float** keyword;
- **Double precision floating point numbers** (64 bits): declared with the **double** keyword;
- **Characters** (16 bits): declared with the **char** keyword. They are 16-bit values rather than 8-bit because they support the Unicode standard;
- **Booleans** (true or false): declared with the **boolean** keyword.

All these should be self-explanatory. Strings aren't in the above group, although single characters are; instead strings are





provided by the class **String** and are defined as objects of that class. The **String** class also provides us with a number of methods for manipulating strings.

Because strings are just objects of the class **String**, we *can* define them with the standard constructor, using **new String()**, but in deference to the way other languages handle strings, Java provides another way to define them, using the equals sign and a pair of quotes, as in:

```
s = ""
```

which is equivalent to:

```
s = new String()
```

If you've programmed in C, you might be wondering if Java strings have null characters to terminate them, but in Java this question is irrelevant: strings are stored in a way that means you can always find out their length, and terminators are not needed. Concatenating strings is just a case of using the + operator, or the alternative **concat()** method, so the following two lines are different ways of doing the same thing:

```
String s = "1234" + "5678"
String s = "1234".concat("5678")
```

This is the best way to overcome the fact that strings can't be broken over more than one line in Java (unlike commands and statements); you can, however, break up long string definitions by splitting the string into sections and concatenating them. For example:

```
String s = "This string is
very long and could not be "
+ "entered as one long line."
```

You can also produce a string from various other types of objects, such as integers and booleans, in which case the string is set to a representation of that object. The **valueOf()** method is used to make strings from booleans, characters, arrays of characters, doubles, floats, integers and long integers, as in:

```
String s = String.valueOf(1);
String s =
String.valueOf(true);
```

Note that **valueOf()** is what is known as a *static* method, so we call it with **String.valueOf()** rather than **obj.valueOf()**: static methods are invoked through the class name rather than through an object of that class and are the closest thing to global methods in Java.

To convert the other way, from strings to other objects, we need to use the specific method for the class we want to convert to. For example, to convert a string **s** to a double we would use **Double.valueOf(s)**, and to convert **s** to boolean we use **Boolean.valueOf(s)**.

Note that in these cases the primitive types have capital letters; as double and boolean aren't classes but types, we can't use them in the **class.method()** syntax, so Java defines some special classes, called the wrapper classes, that let us put primitive types into the **class.method()** syntax, and they are simply the primitive names with capital letters.

Another rather subtle area of Java is equality testing of strings in things like **if** statements. We can't use the == operator for strings because they're not primitive types but a special class. Instead we use the **equals()** method, as in **if (s.equals(r))** to compare the strings **s** and **r**. Similarly we can't use the <, >, <= or >= operators, but instead use the **compareTo()** method, as in **if (s.compareTo(r) < 0)** or **if (s.compareTo(r) >= 0)**.

String methods

Let's take a look now at a few handy methods from the **String** class.

- **s += t**: Concatenates strings **s** and **t** and puts the result in **s**; the equivalent of **s = s + t**;
- **s.charAt(int i)**: Returns the character from string **s** at position **i** (numbered from 0 to the number of characters in the string - 1);
- **s.length()**: Returns the number of characters in string **s**;
- **s.indexOf(t)**: Returns the position at which string **t** appears in string **s**, or -1 if **t** doesn't appear;
- **s.toLowerCase()**: Returns the string **s** converted to lower case;
- **s.toUpperCase()**: Returns the string **s** converted to upper case.

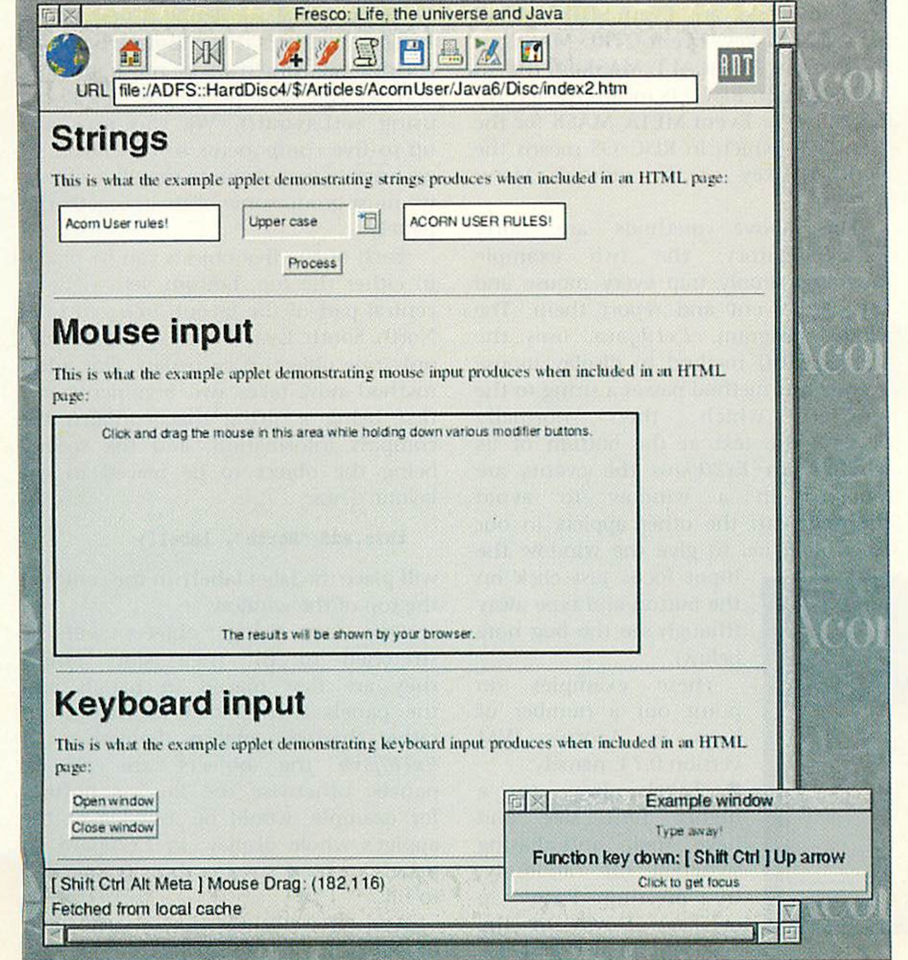
We make use of these methods in our example program *Ex18/java*. It's a simple program that takes an input string from the text field **text1** and processes it according to the user's choice, displaying the resulting string in the text field **text2**. It's pretty self explanatory, except for the two **for** constructs that reverse the string or remove its vowels. In the following:

```
for (int i = 0; (i <
s.length()); i++) {...}
```

the integer **i** is initially set to zero. Then we enter a loop where the code in the brackets is executed and then the third part of the **for** statement is run, in this case **i++**, which is just a shorthand for **i = i + 1**. Then if the condition in the second part of the **for** statement is still true, we repeat the process, running the bracketed code and increasing **i** by one.

In our example the code in brackets will be executed with an incrementing value of **i**, going from 0 to the length of the string - 1; the code itself looks at the character at position **i** on the string, and replaces it with





Strings, mouse input and keyboard input as shown by *!Fresco* and Acorn's JVM

an asterisk if it is a vowel. A similar construct is used to reverse the string, this time counting down from the end of the string to zero, and pulling out the character at that position and sticking it on the end of an initially empty string, **t**, thus reversing the string.

Mouse and keyboard input

Our other two examples this month concern the mouse and keyboard. Both these input devices have dedicated event handler methods that deal with relevant events, and they sit at the same level as our familiar **action()** method: you don't need to write your own **handleEvent()** method, but instead can define the following methods to cater for mouse and keyboard events (see the examples *Ex19/java* and *Ex20/java* for more information).

For the mouse there are the following, where in each case **x** and **y** contain the pointer coordinates of the pointer when the event took place, relative to the applet's display area:

- **mouseDown(Event e, int x, int y)**: Called when the mouse button is pressed down;
- **mouseUp(Event e, int x, int y)**: Called when the mouse button is released;
- **mouseDrag(Event e, int x, int y)**: Called when the pointer is dragged;
- **mouseExit(Event e, int x, int y)**: Called when the pointer leaves the applet's display;
- **mouseEnter(Event e, int x, int y)**: Called when the pointer enters the applet's display.

And for the keyboard, these can be used:

- **gotFocus(Event e, Object arg)**: Called when the applet gains the input focus;
- **lostFocus(Event e, Object arg)**: Called when the applet loses the input focus;
- **keyDown(Event e, int key)**: Called when a key is pressed down. If **e.id** has the value **Event.KEY_PRESS** the key's character is given by **e.key**; if **e.id** has the value **Event.KEY_ACTION** a function key has been pressed as given by the value of **key**. Modifier keys are given in **e.modifiers**.
- **keyUp(Event e, int key)**: Called when a key is released. If **e.id** has the value **Event.KEY_RELEASE** the key's character is given by **e.key**; if **e.id** is **Event.KEY_ACTION_RELEASE** a function key has been released as given by the value of **key** (see below). Modifier keys are given in **e.modifiers** (also below).

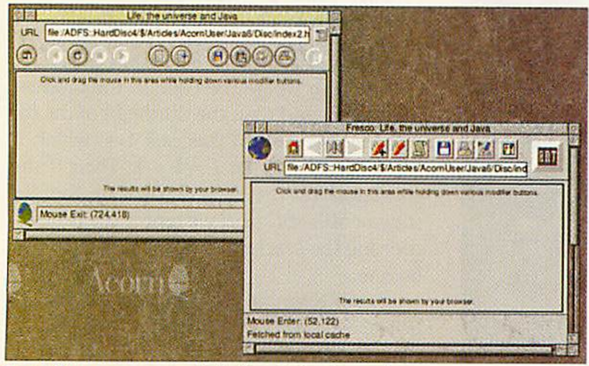
The possible values for **key** are as follows: **Event.Home** for the Home key; **Event.END** for the End key; **Event.PGUP** for the Page Up key; **Event.PGDN** for the Page Down key; **Event.UP** for the Up arrow key; **Event.DOWN** for the Down arrow key; **Event.LEFT** for the Left arrow key; **Event.RIGHT** for the Right arrow key; and **Event.Fn** for the function keys key, where n is between 1 and 12.

The value of **e.modifiers** determines which modifier keys were pressed as well. It should be tested against the following masks using the & operator, as in:

```
if ((e.modifiers &
Event.SHIFT_MASK) !=0) {
  ...If we get here, Shift was
pressed...
  }
```

Note that != is Java's inequality operator, the equivalent to BASIC's <> operator. Possible masks are **Event.SHIFT_MASK** for the Shift key; **Event.CTRL_MASK** for the Ctrl key; **Event.ALT_MASK** for the Alt key (which in RISC OS means the left Alt key only); or **Event.META_MASK** for the Meta key (which in RISC OS means the right Alt key or the mouse's Menu button).

The above methods are fairly self-explanatory: the two example programs simply trap every mouse and keyboard event and report them. The mouse program, *Ex19/java*, uses the **showStatus()** method to display mouse events; this method passes a string to the browser, which then normally displays the text at the bottom of its window. In *Ex20/java* the events are reported in a window to avoid clashing with the other applets in our *index/html* file; to give the window the input focus just click on the button and type away (though see the bug note below).



Reporting mouse events in the status bars of *!Browse* (top left) and *!Fresco* (bottom right)

These examples do point out a number of bugs in Acorn's JVM version 0.74, namely:

- Labels leap to a higher font size and have their anti-aliasing switched off randomly: try pressing Page Up or Page Down in the keyboard applet and see what happens;
- If the pointer is left over the window that reports the keypresses, no keys are detected, but moving the pointer off the window fixes things;
- Some keys, such as Home and End, only report a **KeyDown**, never a **KeyUp**;
- Sometimes with *!Fresco* (not *!Browse*) the **MouseExit** event is not reported, even though **MouseEntry** always is;
- The **gotFocus()** and **lostFocus()** methods are never called, even when the focus is changed;
- Label text is clipped badly: look at the label in the keypress window. This problem also occurs with long buttons.

Add to this the fact that version 0.74 also refuses to display buttons and check boxes unless they're in panels, and the non-Acorn JVMs begin to look much more attractive...

Border layout

There is one final point to raise about the *Ex18/java* and *Ex20/java* examples, and that's their use of the **BorderLayout** layout. This layout is particularly useful if you want to arrange buttons in a window quickly, and that's the reason that the default layout manager for dialogue boxes is **BorderLayout**. Let's see how it works.

As per usual we define a new border layout with the **BorderLayout()** constructor, which takes no arguments, and set the window to use this layout using **setLayout()**. We can now add up to five components to this layout: if we want to include more than five objects we must group some of them together in panels.

Each of the five objects can be placed in either the top, bottom, left, right or central part of the layout, (referred to as North, South, East, West and Center) with only one object in each part. Our **add()** method now takes two arguments, the first being a string that contains the compass information, and the second being the object to be placed in the layout. Thus:

```
this.add("North", label1)
```

will place the label **label1** in the centre of the top of the window.

One last thing: objects will be stretched to fill their slots unless they are first placed in panels and the panels then added to the layout rather than the objects themselves. In *Ex18/java* the objects are all in panels, otherwise the Process button, for example, would be as wide as the applet's whole display; in *Ex20/java* no panels are used, so everything is stretched to fill.

And that brings us to the end of our look at strings, mice and keyboards. AU



Final impact

Brian O'Carroll concludes his *!Impact-3* campaign

The two previous articles in this series have revealed *!Impact-3*'s calm and logical basic workings. This month's article suggests ways of creating larger and more diverse scripts, continuing to make life easier and easier.

Housekeeping

The Action script commands **First**, **Next**, **Previous**, and **Last** can be used to access the data in different records in the database from within an Action script. They do not actually change the record displayed since they operate in their own context that is distinct from the user's context. These commands also work in conjunction with **Index Filter and TempFilter** commands, enabling the database to be worked through in a way that is useful to you.

These commands can be used to write what I call a housekeeping script. For example, if you wanted to be sure that all the post codes in your addresses database (in a field called **postcode**) are in capitals you could use a housekeeping script like this...

```
Local "keepgoing";
TempFilter "Len(postcode) > 0";
First;
keepgoing = 1;
While(keepgoing);
{
 postcode =
UCase(postcode,1,Len(postcode));
 Save;
 keepgoing = Next;
}
```

The variable **keepgoing** is used as the condition for the **While** loop, which will be repeated until its condition is 'false' (or zero). The command **Next** will move to the next record and also return a 'true' value (non zero). If there is no next record **Next** returns a 'false' value. By assigning **keepgoing** to the value returned the loop can be made to end only when the last record is reached.

Beware of using variables that are the same as a command: if **next** is used as a variable it will also act as the command and move onto the next record each time it is used. This kind of error can be very difficult to track down.

A housekeeping script can be used to copy data into a new field if you change your mind about how you want the data stored in a database. If your database has a Notes field, but its contents are brief and occur on many records, the data could be stored in a short Text field instead. A housekeeping script can be used to copy the data from the old Notes field into your new Text field before deleting the Notes field. You can't do the reverse of this example, copying from a Text field to a Notes field, because of the special nature of a Notes field.

In this manner you can change your mind about how your database is set up at any time without losing any of its data. Note that you can only access the first 255 characters of a Notes field from an Action command, although it can be merged or exported complete.

Action script workhorse

The housekeeping script described above is a basic form that can be adapted to do some very serious day-to day work. By stepping through each record in turn a script can take a different action for each record based on the contents or setting of a number of fields. This is where workflow comes into its own. All those flags and dates that have been dotted about the database to keep track of real life processes can be used to decide which action to take for each record.

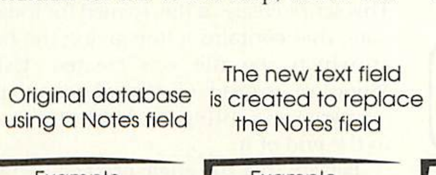
The following script written for an address database will print a letter if the person in the record lives in a given street...

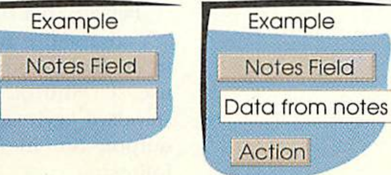
```
Local "keepgoing","streetname";
keepgoing = 1;
streetname = "Wood Avenue";
First;
MergeTo "OvationPro";
DocLoad DataName +
".Documents.SpecOffer";
While (keepgoing)
{
If (SubText(address, streetname))
{
DocMerge "SpecOffer";
DocPrint "SpecOffer";
} keepgoing = Next;
}
Macro
"{filescrap(currentfile())}","SpecOf
fer";
```

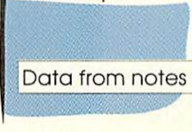
The final command will only work with *!OvationPro*, and simply closes the merge document once it is finished with. Notice that the merge document is only loaded once, outside the **While** loop.

This document is then merged and printed every time a record matches the condition **SubText(address,streetname)**, which is true (non-zero) if the phrase **Wood Avenue** is found in the **address**









The stages involved in using an Action script to change the field type used for a particular set of data in a database.

field of the current record. The condition for printing a letter could be anything – the script could be made to send a reminder invoice if payment on an account has not yet been made.

This kind of script can also be left to run while you go and have lunch. When you return there'll be a pile of letters for your assistant to stuff 'n' stamp, and then you can send your junior assistant down to the post office with them!

File storage

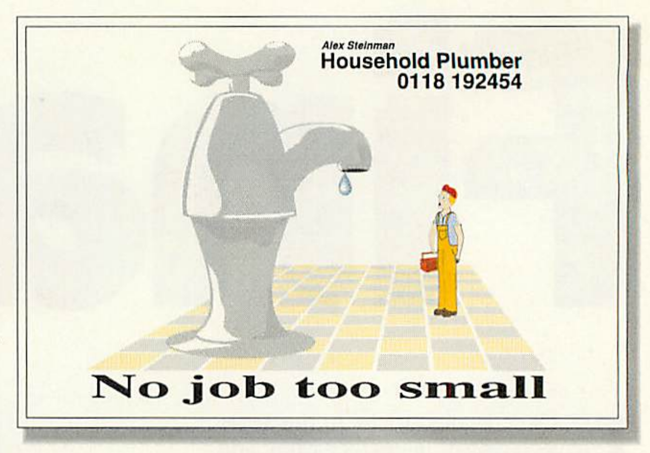
You're probably going to create many invoices, orders, letters, and so on, using Action script and Merge documents. After creating and printing them it is useful to retain a copy of the printed document on the computer. So far in this series I have always described saving a document as a user operation – an Action script merges a document ready for editing and printing, then the user saves it to a filer window. This is of no use if you want your invoices printed out over lunch – *!impact-3* must be able to decide where to save them itself.

Here's a script that merges a document called "Invoice" and stores it somewhere sensible. To achieve this the blank merge-tagged document is first copied to where the final document will end up, then this new copy of the document is used as the source for the merging process.

```
Local
"srcfile","destpath","destfilename";
Global "invoicenumber";
destfilename =
"INV"+Format(invoicenumber,"%04.0f")
;
destpath =
"ADFS::HardDisk4.$.Work.Invoices" +
DFormat(Today,"%ce%yr") + "." +
DFormat(Today,"%mn");
srcfile =
DataPath()+".Documents.Invoice";
*copy (srcfile+" "+destpath+"."
+destfilename+" sv~c");
DocLoad destpath+"."+destfilename;
mergeto "OvationPro";
docmerge destfilename;
docfix destfilename;
Macro "{savedocument(\"\")
}",destfilename;
```

The last line is another *!OvationPro* only command, and, unfortunately for non-*!OvationPro* users, it is the crucial one – there is no alternative for *!Impression* users.

The command saves the document named in the variable **destfilename** to its existing save path. In this case, it will be saved over the top of the merge-tagged which was created using the ***copy** command (see below for an explanation of star commands in Action scripts).



I've used today's date to make names for suitable sub-directories inside the directory *ADFS::HardDisk4.$.Work.Invoices*. You could substitute your own system variable for this part of the file path, one that is defined in your *!Boot* sequence for example, which would enable you to easily change where all the documents go should you get a new hard disk or connect to a network.

One thing the above script does not do yet is create any of the sub-directories it needs. This has to be done before the ***copy** command is used, or it will have no effect. The additional script needed is...

```
Local "dot","pos"
dot = 1;
pos = 0;
While (dot)
{
 dot =
SubText(Text(destpath,pos+1,-1),
".");
 pos = pos+dot;
 If (dot) *CDIR
(Text(destpath,1,dot-1));
}
*cdir (destpath);
WimpPoll 100;
```

This piece of script could go immediately before the *copy command in the script before, and uses the **destpath** variable to create the path required. The **WimpPoll** instruction gives control back to the operating system for a moment, and is needed to make sure the ***cdir** command gets actioned before the directories it creates are used.

Star commands

As indicated by ***copy** and ***cdir** (create directory) in the scripts above, star commands can be issued from Action scripts, and, crucially, data from the database can be put into these commands. Look at this script, for example.

```
*Spool RAM::RamDisc0.$.TestFile;
*Echo This is some test text;
*Spool;
*SetType RAM::RamDisc0.$.TestFile
Text;
```

Provided you have a RAM disc set up this script will create a file in it called 'TestFile' that contains a line of text saying "This is some test text".

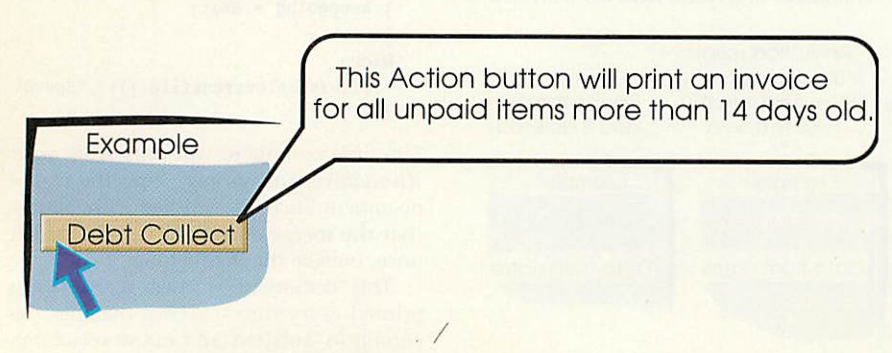
However, if the data after the star command is replaced by a bracketed expression, this expression is evaluated by *!impact-3* before the command is issued to the operating system. Try this script instead:

```
Local "filename";
filename =
"RAM::RamDisc0.$."+DFormat(today,"%c
e%yr-%mn-%dy");
*Spool (filename);
*Echo ("The time is
"+DFormat(today,"%z12:%mi%pm"));
*Spool;
*SetType (filename +" Text");
```

This script creates a file, named for today's date, that contains a line giving the time at which the file was created. Using ***Spoolon** instead of ***Spool** would not overwrite an existing file, but instead adds to the end of it.

Beware that the angle brackets, '<' and '>', are used to surround system variables in an *Echo command, so you'll need to use '|' (Shift-\, next to the 'Z' on a standard keyboard) to force a '<' into the output. So, in an *!impact-3* script, the following...

```
*Echo ("|<html>|<head>|<title>Home
page|</title>|</head>");
```



How a 'Bubble Help' application helps a user to understand what a briefly labelled button actually does.

```
*Echo ( "The year is <Sys$Year>")
```

...produces the output...

```
<html><head><title>Home
page</title></head>
The year is 1999
```

The Action command **Sys()** is used to find the value of a system variable. A useful system variable to know is **Printer$**, which is set by the printer driver to the name of the printer selected. The script command...

```
If (Sys("Printer$") == "") Error
"No Printer driver present"
```

...will abort a script that prints something if you've forgotten to load a printer driver, and will generate an error window that says as much.

A quick 'phone call

The Action script command **Modem** is used to send data to a modem. What to say to your modem depends on what one you've got, but the most useful application for *!impact-3* users is saving your fingers by making the database dial a telephone number on the record. A script for auto-dialling might look like this...

```
Modem "ATDT" + telephone + "^;\r";
Pause 800;
Modem "ATH0\r";
```

...where **telephone** is the name of a field that contains a telephone number. The **Pause** is to give you enough time to pick up the handset after the modem has dialled, in this case 800 causes an eight second wait, and the last command tells the modem to hang up.

Help text

Who is going to be using your database? If it is just you, and that's definite, then if you make a mess you live in it, and whatever makes you happy is fine. If, on the other hand, other members of your family or work colleagues might use it then some kind of intuitive order needs to be imposed on your databases.

Putting comments in Action scripts (use a '!' to start a one line comment) is a good idea, although that will affect only those who edit them. But you can put comments in every field too via *!impact-3*'s help text facility.

When editing a card, menu-click over a field, then follow the **Field '<fieldname>'** option on the menu. There is an option called **Help Text** which allows you to enter a helpful description of what the field is for.

This text will be displayed by the RISC OS help application when the pointer moves over that field. I find it useful to include the name of the field in the help text (with correct case) so that writing scripts is easier. There are three lines of help text, each of which will remain separate when displayed. Other help applications like 'BubbleHelp' may only display the first line, so make that one count.

The addition of Help text to *!impact-3* really puts polish on the illusion that each database is a RISC OS application itself.

And finally....backing-up

Backups are very important – they not only keep you sane, but can make you feel warmly smug when you need to resort to using them. In *!impact-3* each database can be made to backup automatically at certain times to a specified place using the blue disk backup tool and the application choices. At any time a database can be manually backed up, using its backup tool, to any filing system destination as required. Circle Software's generous investment in backup facilities is with good reason, data loss can happen to you!

The easiest way to lose all your hard-won data is by using a human error, often encountered as 'whoops, I didn't mean to click on Delete'. Another common cause of data loss is the 'software bug', which is a human error on the part of the programmer. Note well that as soon as you start writing Action scripts you become a programmer, which gives you more power than other users to do something awful.

In addition to software problems there are the hardware failures to think about. These are rarer but when they do happen they are more devastating. A hard disk failure will eradicate all the data on that entire disk, these days that could be up to twelve gigabytes of data. For this reason, it is sensible to store additional backups of your databases on separate media to the working copies. *!impact-3* databases take a long time to become bigger than a single 1.6MB disk in domestic use, but you may have an exceptional use, in which case a large format removable device like a Zip drive might be required, or a backup utility that can split the database over many disks.

Remember, data loss is indiscriminating and can even happen to nice people... AU

It's turned out nice again

Wednesday, 6.14pm: It is still light outside now that Spring has been announced, and Alex is doing his chores. Every evening he enters the receipts he has accumulated through business expenses into an *!impact-3* database called Purchases. This will make end of year accounts very easy since a single Action script can be written to run through the database between two dates and generate an end of year summary.

It is also backup day. Should the data Alex is feeding into his accounts database could get lost without backups he will have to spend many long nights reconstructing it, and will be tormented by the knowledge that he had wasted half an hour every working day entering it in the first place.

Thursday: 1.07pm Alex has decided to be a little more commercial and has left his computer printing postcards for him over lunch. With the help of an optional thick-sheet feeder and the appropriate Action script, Alex is sending all his clients a postcard advertising his services (of course, Alex is registered with the Data Protection Registrar for the purpose of using names and addresses of clients for advertising purposes).

He has decided to send cards just to local people initially, so only addresses with the same general post code as his own are printed. The postcards (sporting a catchy plumber cartoon) are addressed and printed with a friendly message on the back at the click of a button.

Some clients get sent other letters from Alex as well. Sometimes, when working for a company, payment is not made to him immediately and an invoice has to be sent to head office. Alex sends these invoices on Monday evenings using a 'round up the stragglers' button that also prints reminder invoices for all jobs that have not yet been paid for in full, but were completed more than 28 days ago.

Friday 4.11pm: Alex walks backwards down Miss Polly White's garden path and waves 'au-revoire'.

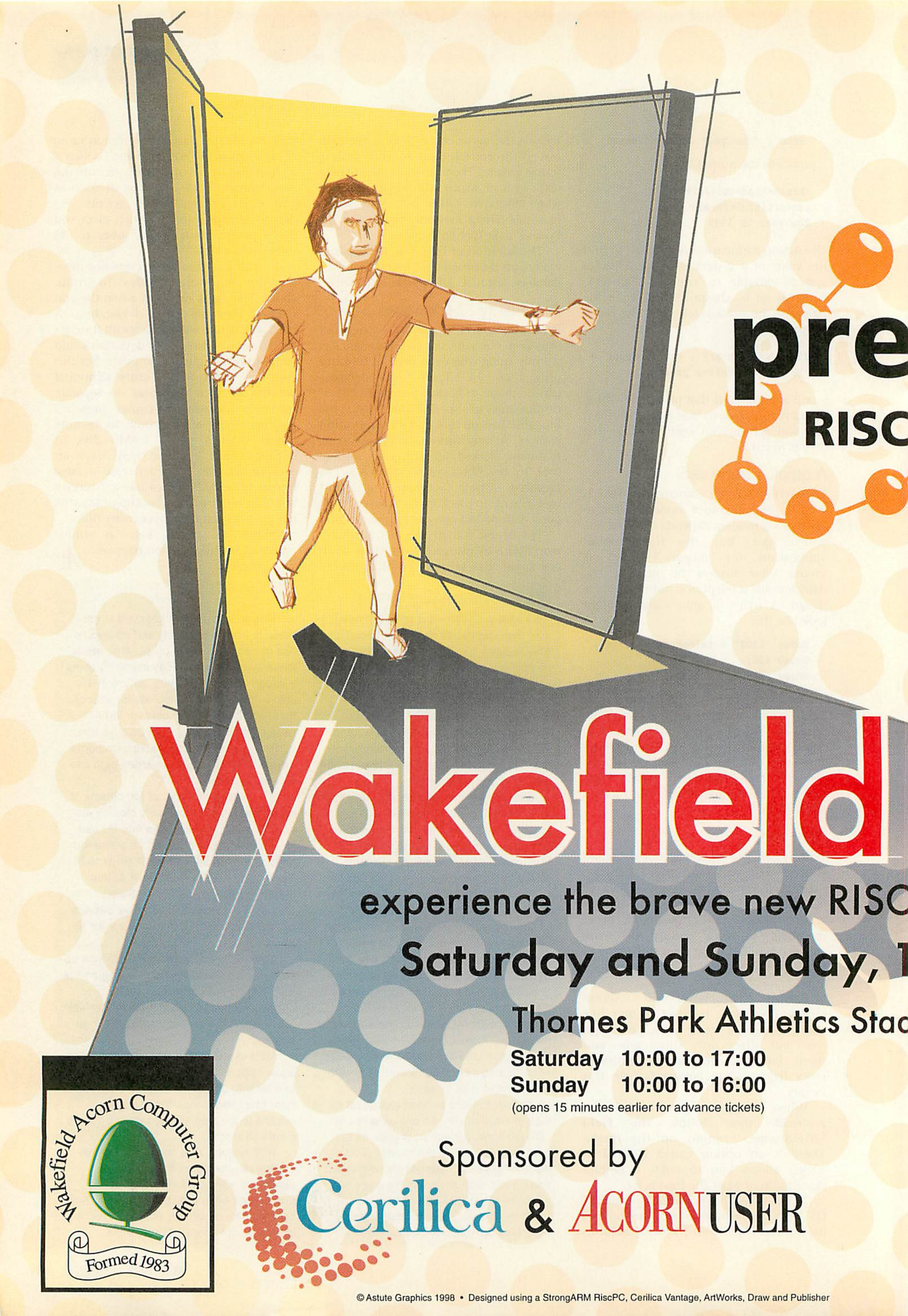
"I'll meet you in front of the cinema at eight, then." she says, finally closing the door. Alex nods and climbs into his van.

His nervous grin turns to a ponderous pout a moment later when he turns to his Peanut and hits the 'List Work' Action button in his Jobs database. Sure enough, 8pm tonight is listed as 'service call for new central heating pump' for Mr Kenyon.

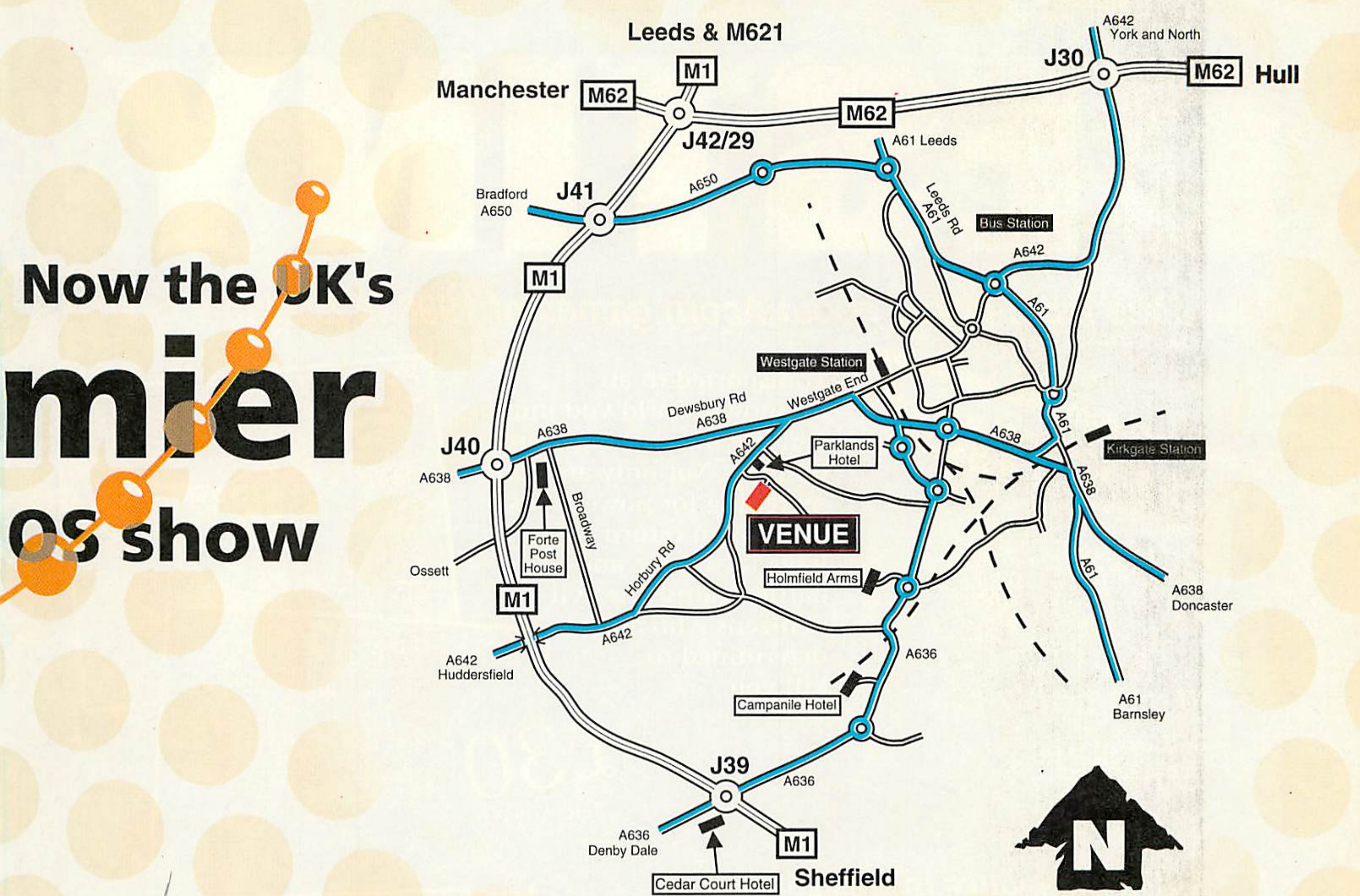
Alex clicks on the entry then brings up Mr Kenyon's Client record. Clicking on the 'Dial' Action button, Alex raises the beeping mobile phone (it's OK, his vehicle is stationary) to his ear and waits for an answer.

After explaining to Mr Kenyon's answerphone that he has been called out to deal with a burst water pipe on the 25th floor of a tower block, the silly grin returns to his face and he drives off to do a little shopping.

That evening Alex takes extra safety measures – he a disk backup of his databases with him in his shirt pocket, just in case his house burns down while he's out. The remainder of Alex's weekend is outside the scope of this article.


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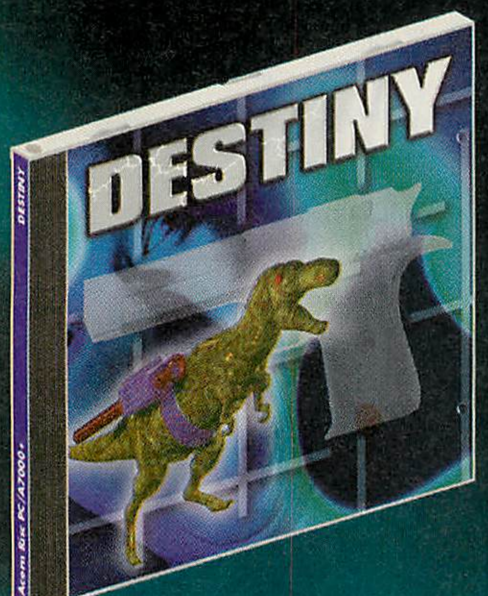
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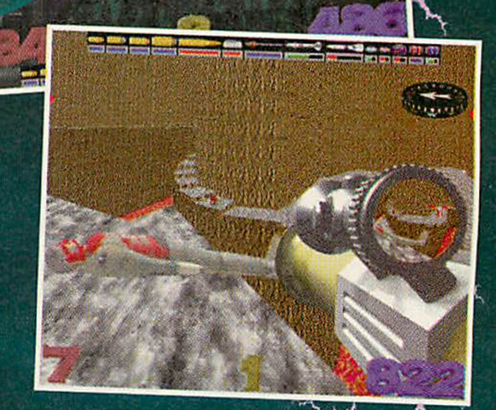
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To PC or not PC? Part 2

Chris Drage rounds up his series on Acorn confidence

Last month I looked at those companies who continued to support the Acorn software market, this month I turn to that other vital part of computing – the machines themselves.

Hardware

What of hardware? With Acorn ditching the one thing all the software hinges on is there a basis for optimism here? If you look through Xemplar's website Acorn products are now conspicuous by their absence. They are there, buried away almost shamefully in a cupboard. But fear not, Castle Technology Ltd has stepped in to handle all the distribution and warranty agreements for Acorn machines.

CTL will distribute to quality dealers like, for example, Cannon Computing who themselves remain dedicated to selling and supporting Acorn machines. The icing on the cake is that as never before, you will be able to buy Acorn machines customised for specific needs like the Web Wizard Risc PC and the Sprinter N.C.

Jack Lillingston of CTL comments, "Although Acorn's recent restructuring may have appeared ruthless, there are some very important facts that we should all consider that make the prospects for the future very bright indeed. In recent years various restructurings of Acorn have led to full accountability within the company. Unfortunately bad decisions were made in the mid-1990's and these have now come home to roost. I feel that the following points should ensure that what is to come will, sooner rather than later, prove to be very successful for schools and colleges who stand to gain the most.

"The re-organisation in September 1998 has enabled a new and unencumbered structure to emerge. This structure is now purely commerce driven, where tangible profit (the life blood for any company) is king. Gone are the days of decisions that could never be profitable. This is not talk of profiteering, but essential and sensible cost conscious decision making that enables all levels, from the product design and build, to the purchase by the end user, to be rewarding and therefore sustaining for all concerned.

"Acorn has, and I hope always will, produced excellent, reliable world class technology. From time to time Acorn has released its current state-of-the-art computers with varying degree of success. All of the successful (biggest selling) Acorn computers have been variations of the state-of-the-art theme, with specific parts kept and developed. ie the BBC Master, A3000, A3020/A4000 and more recently the A7000 and N/C. The current computers are no exception, they are very powerful systems that provide a reliable and cost effective base for education and a wide range of other markets.

"Of course part and parcel of this important product range is RISC OS, Acorn's easy-to-use, reliable, powerful, ROM based operating system. Recent developments have made this even more powerful and fully-featured. I hope that the industry will soon be benefiting from these developments. Although in recent years Acorn's name has not been particularly prominent, Acorn computers are widely respected by those that use them. This is a very sound foundation for future marketing promotions and something that we will be focusing and building on.

"The technology that Acorn uses to produce its computers ensures that an Acorn computer will still be going long after the competition have given up. It is worth re-emphasising these points: Acorn's excellent build quality with integrated motherboard design, ensuring that power is kept to a minimum and sub-system compatibility is maintained. Acorn's robust design and quality components mean that in service repair is minimised.

"Acorns are designed for long in-service use. This flies in the face of built-in obsolescence, commonly found on other platforms. The industry can boast a complete product support infrastructure. From small or large publishing houses, through a knowledgeable and efficient dealer base, to a dynamic and enthusiastic user base".

The latest news as I write this is that CTL has acquired the licence to build Acorn A7000+ computers – a licence which also permits CTL to enhance and develop the product for the future. This is great news for schools who, I can assure in all confidence, will benefit substantially from the experience and commitment of CTL. The future is assured as far as CTL are concerned but what about other, third party hardware providers?

Cannon Computing and Cumana remain fully behind the Acorn platform in terms of supplying and developing hardware. They have for many years offered a vast range of third party peripherals to go along with the Acorn range of machines. Even though the Acorn name has suffered over these last few months they believe that the structure which has been put in place will work out, but it does mean that everyone must get behind the system and strategy.

This is a point which Nigel Taylor of Cannon Computing is keen for schools to be aware of, "As a company Cannon Computing and Cumana have put in a



large amounts of money to promote Acorn within schools, and with the release of NGFL money into education it is of utmost importance that schools know that Acorn equipment can still be purchased, delivered and above all, supported. Most schools are being pressurised into buying PC's and from their experiences these schools do not want this, they often want to buy Acorn because it's what they know and the machines are easy to use.

"Cannon Computing and Cumana have gone to great lengths to find out from the Department of Education the actual rights for the schools. Schools do have a choice and it important that they know it. 95% of the money is theirs, they can do whatever they want with it, they do not necessarily have to go with the local authority decision." A point to remember.

If the future distribution of existing Acorn machines looks secure, what about new models? There are two new A7000+ clones on their way: the Medi and the Peanut. Not exactly 'new' machines in terms of technology, but certainly in terms of packaging and I.T. provision.

As far as the soon-to-be-released Medi is concerned, David Atkins of Micro Digital is only too anxious to get the first machines into production. The Medi looks to be an ideal machine for any school upgrading from A3000s, A3010s, A3020s or A4000s and could be the machine that teachers use at home in order to maintain compatibility with school. It should certainly offer stability and good performance with low running costs.

Interconnex (UK) Ltd is so confident in the Acorn market place that it is currently making the first ever RISC OS portable computer to be produced by a company other than Acorn Computers. The 'Peanut', represents a highly specified, integrated, portable computer solution which fills a gap that has been left wanting for too long.

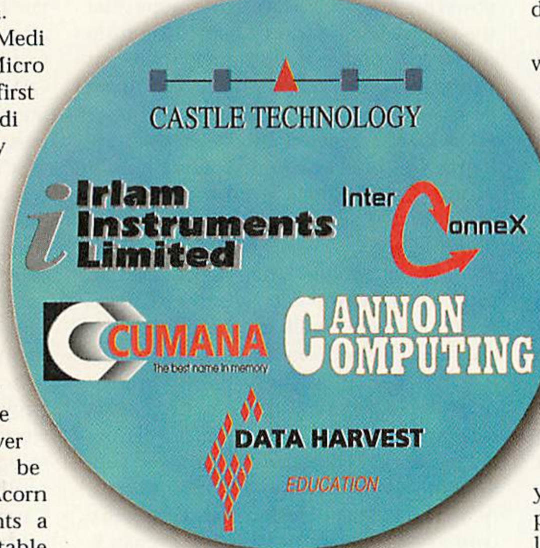
For the education market Peanut provides portability and ease of use. As Paul Corke, Interconnex's MD, is quick to point out, "We've also recently released a new digital camera (the Mustek vdc300) and a new CD-ROM (World Factbook). If we didn't think there was a market, then we wouldn't bother developing new hardware and releasing new products".

The attitude of other third party Acorn-related hardware developers is probably summed-up by Barbara Higgingbotham of Data Harvest: "We launched EcoLog this year and this works with Acorn computers with Sensing Science software. We felt there were plenty of Acorn computers that teachers and children are used to using in primary schools all around the country. Why limit the new product just to completely new computers? We will continue demonstrating our equipment on Acorn machines in schools and at I.C.T. Centres, where they have them".

Other hardware related developers are also confident. Both Spacetech and Irlam Instruments have peripherals like scanners and digital cameras well sorted. As Jim Irlam of Irlam Instruments comments: "We are still supporting our products and customers and will continue to do so for the foreseeable future. In fact, we continue to develop products for Acorn machines.

There is lots of software work going on with *!Videodesk* and we are about to launch a low-cost 16-bit sound card (as lots of people have asked for this recently with advent of cheap CD writers). So the bottom line is that we don't intend to leave the Acorn market".

And they're not the only ones, as we go to press rumours abound that at least one other interested party is set to produce RISC OS machines in the near future. If such projects come to fruition it



will mean a re-vitalised Acorn marketplace and a brighter future for our machines.

Conclusion

Computers are a resource just as photocopiers are a resource. Just because a photocopier manufacturer decides there will not be any further models does not mean you stop using the existing copier. It just means that when you buy new in the future, you have less choice. Many schools seem to be responding to the understandable, if depressingly predictable, clamour from parents and governors to move to 'industry standard' machines.

Those who work 'in industry' know that there ain't no such thing as an industry standard machine, it's an illusion. Congratulations to those LEAs who've decided to put *Windows NT* into primary schools because it was better/more stable that *Windows 95*! What are they going to do about *Windows 98*? and *Windows 2000*? *Windows* is a costly platform for development and schools who start throwing out Acorns and buying PCs are going to find software is mighty expensive!

Those who still have Acorns are going to find our software is still relatively cheap for them. I fear that schools being forced to disregard Acorn computers now, won't realise their mistake until it is too late to change back. It remains my opinion that the A7000+ and Risc PC are excellent computers for use in schools. Their life expectancy is much longer than one might expect from a PC. In my school we have two A3000s dating from 1987 still in service and running the latest version of *!TextEase*. Let's face it, Acorn computers are going to be around for many years to come. Schools using some of the older Acorn computers (A3020 and A4000) could make more use of these machines if they were to invest in a hard disc and/or a memory upgrade to 4Mb.

It is very frustrating and limiting that when software developers develop new software for Acorn that they have to think in terms of a 2Mb memory limit. This limits the features they can incorporate into the software – a problem they don't face with PC's which are typically shipped with 16Mb or more memory and always have a hard disc. What I do fear most is that Acorn machines will get passed 'down the years' like Beebs and Master128s did – and we all know what head teachers tend to say when you ask if you can buy some software for 'old' machines....

No company is going to instantly scrap years of work, so as far as third party products are concerned these are largely secure with the added bonus for school users that, unlike the PC world, the Acorn world is a community of users and suppliers who actually listen to each other. But rationally I can't see anyone starting major new products. A lot depends on how things settle down and the rate at which Acorn users desert or are forced out by changes in standards to move to other platforms.

The only standard schools should be concerning themselves with are educational ones, so your decisions about which platform is for you largely controlled by which machines software publishers write software for. The Acorn ball is really in your court. As we look forward to the next millennium I imagine that there will be many more changes in the computers we use, but one thing is for sure – there will still be an A3000 lurking about somewhere.... AU

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Doom-it-yourself

Alasdair Bailey invites you round to play

Welcome to a very murky edition of Game Show. This month I bring news of an exciting new competition for you to all to enter. We're giving away one copy of the new CD version of *!Destiny* to the designer of the best *!Doom* level. More on that competition can be found on the following pages, there's also a full review of the new *!Heretic and !Hexen* double pack from R-Comp.

The competition

Right then readers, there's a level editor on the cover disc, if you want to stand a chance of winning – get designing! OK, so you don't have the slightest clue when it comes to designing *!Doom* levels? Fear not, my gaming chums, a full tutorial to help you design your first level is provided for your *Dooming* pleasure.

First off, dig out the *!Doom* WAD editor which will be located somewhere on this month's cover disc going by the name of *!Deth.* However, you do not have to use *!Deth* to produce your level, entries created on similar PC/Mac map editing suites will also be eligible for entry.

Entries to the competition must be submitted as WAD files. WAD files are, quite simply, a level or collection of levels for use with *!Doom.* In the words of the mighty Justin McDoom:

"The game play can be changed through the use of 'WAD' files, collections of graphics, maps and other information. Of these, there are two variants, primary 'Initial' WAD (IWAD) files which contain everything the game needs to function, and secondary 'Patch' WAD (PWAD) files which only change part of the game. PWADs always override IWADs, so any PWAD you add will change the game itself."

You will be working on designing PWADs, the main IWADs for *!Doom* and *!Doom II* will have been supplied with your copy of *!Doom* and they contain all the wall textures and sound effects that will be used to make your levels work.

What you can win

Those nice chaps at R-Comp Interactive have kindly offered to put up the prizes for this competition:

- First prize – £20 voucher for any RCI game. Available games include *!Heretic and !Hexen, !Heroes of Might and Magic 2, !Abuse, !Descent, !Syndicate+, !Ankh* or *!Exodus.*
- Runners-up prizes – 5 copies of Heroes of Might and Magic 1 (PC version only).

Each R-Comp offering will be matched by *Acorn User* with a copy of *!Destiny* on CD

Getting started

Before you start to edit your level, you'll need to tell the editor where to find the main IWAD file for *!Doom II.* This is done by altering the path in the file *!Deth.config.Doom2/cfg* (shift double-click on *!Deth*) to that of your own copy of the *!Doom II* WAD. If you are using R-Comp's *!Doom(+),* the WAD will be located in the same directory as *!Doom,* simply drag the WAD to the text editor window while holding down the shift key and RISC OS will automatically enter the full file path for you.

Once that's done, double-click on *!Deth* and you will hopefully be presented with the main menu. From here, click on the *create* button in the bottom right hand corner of the screen. Now it's time to start creating our level.

This tutorial will talk you through creating a very simple room with four walls and a single raised pillar in the centre. If you get stuck, please refer to the more in-depth tutorial located in *!Deth.Docs.Tutorial.*

To create our level, we must first position the vertexes (corners) then link them together with walls (called linedefs in this editor). First, press V to change to vertex mode. Now that we're in vertex mode, position the mouse where you want to have each vertex and press the insert key (located just to the right of backspace on your keyboard).

The four corners of the room should now be in place so it's time to add some walls. Click select on each vertex in a clockwise direction around the room. This has now selected each corner to be joined and told the editor that they are to form a room with walls pointing inward. Press insert once again to add linedefs (walls) to the selected vertexes.

You will notice that the editor has automatically added linedefs to three sides of the room but not the fourth. This is done by switching back to vertex mode by pressing V, selecting the two vertexes to be joined and finally pressing insert to add a linedef. In order to ensure that the level will work properly, all of the linedefs need to be pointing in towards the centre of the room. If any are pointing outwards, simply click select on them then use the menu bar at the top of the screen and click on Misc->Flip LineDef.

Your map should now look something like

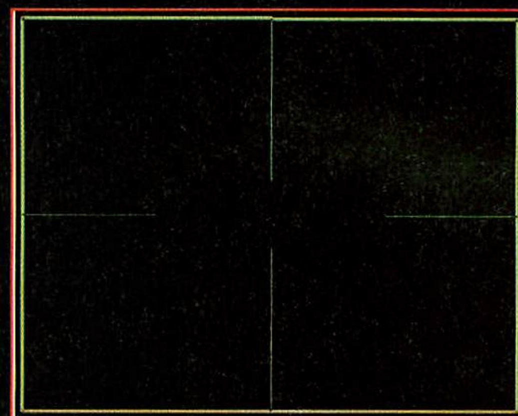


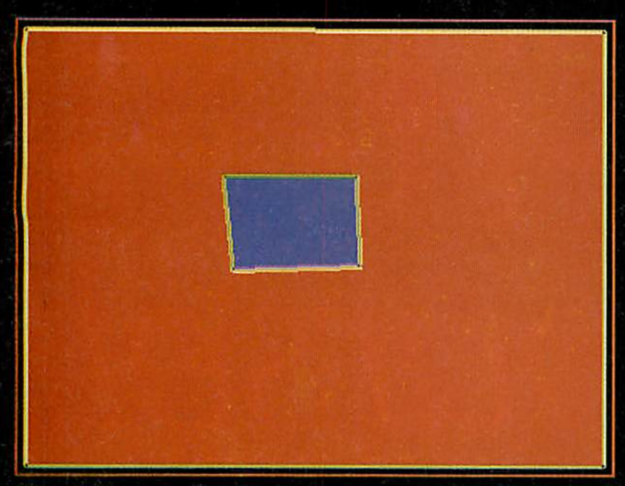
Figure I: The beginnings of a room

Figure I (note that the linedefs have all been selected in order to illustrate orientation). Press V once again to enter vertex mode and, using the method outlined earlier, position four vertexes in the middle of the room to form a pillar.

Now select each of the vertexes in turn in an anti-clockwise direction (so that the linedefs will point outwards) and press insert to add linedefs. If a linedef is missing, add it in as described earlier. Now that we have walls and corners marked out for both the room itself and the pillar, we need to tell the game some things about each section.

In this editor, sectors are used to divide a level into sections, each of which can have different floor and ceiling heights and textures. To create the sectors first ensure you are in




Figure II: Your room from above

linedef mode by pressing L then select all the visible lines by holding down shift whilst dragging the mouse with select.

Press insert and a sector will be added covering the outside of the pillar. We also need a sector to cover the pillar itself. Simply repeat the above process but only select the pillar's linedefs and be sure to press L before starting to switch back to linedef mode.

You should now have two sectors, one covering the outside of the pillar where your character will walk and another just covering the pillar (see Figure II, sectors are shaded for clarity). The editor has automatically set the floor and ceiling heights to its default values. However, the sector containing the pillar must have a floor height equal to that of the ceiling height of the rest of the room.

Press S to switch to sector mode then with the pointer over the pillar sector so that it is highlighted yellow, click the middle mouse button. A small window will pop up from which various attributes of the sector can be modified. Click to change the floor height and enter a value of 256 units. This will ensure that there's no space between the ceiling of the room and the top of the pillar.

In *!Doom*, each linedef must have a specific wall texture set up. These are handled as what are called sidedefs. You needn't worry to much about them for now, just be aware that they concern the attributes of a particular side of a wall section. *!Deth* will have set up wall textures already but we need to alter the textures for the pillar because it is raised up from the main room.

Press L to switch to linedef mode then select all of the linedefs forming the pillar. Click once with the middle mouse button over the selected linedefs then select 'Edit the first sidedef' followed by 'change normal texture' in the resulting menus. Delete what is currently present in the text box and replace it with a single dash. This will remove the normal texture from the pillar sidedefs.

Now we need to add a lower texture to the linedefs associated with the pillar. This is done by clicking on each in turn then on the middle left of the large grey panel in the bottom right of the screen. Thumbnail pictures of all the wall textures available will be shown and all you need to do is select a texture and that will be used on that linedef.

The level is now complete, all we need now is a start position. Press T to switch to things mode then press insert somewhere within your room. By default, a player one start position is placed down but this can be changed to a number of other things including monsters and power-ups by clicking the middle mouse button over it. Finally, press F10 to perform all checks. All being well, a couple of warnings about deathmatch player start positions will pop up but they're nothing to worry about at this stage. If you've messed up any of the textures on the pillar, the computer will automatically mend them for you at this stage.

Once the checks are complete, click on File then Save As. Since *!Deth* is a conversion of a PC editing suite, by default it saves into your computer's CSD (currently selected directory). For most users this will be set to the root directory of one of your hard discs but if the file goes walkabouts, a quick filer search for 'MAP01/WAD' will find it. Press enter to accept the filename and then to save the map as a replacement to *!Doom's* own level 1. Now all you need to do is quit the editor and double click on the level and hey presto, *!Doom* loads up and you're able to walk around your rather dull little room with a pillar in the middle of it.

If something goes wrong at this stage, you'll need to re-read the instructions and refer to the example WAD file supplied on the cover disc. To load your WAD back into *!Deth*, load the editor then click select on the grey 'command line' bar at the base of the screen. Then just type 'R MAP01/WAD' to re-load your map (remember to type it without the quote marks). The editing screen is then reached by clicking on Edit.

Your level will, of course, have to include more complex elements such as doors, switches and even monsters. A very thorough tutorial is contained within *!Deth.Docs.Tutorial* which you should refer to for further assistance.

The conditions of entry are shown below. If you get stuck, e-mail me at games@acornuser.com and I'll be happy to help you out. Snail mail requests for help should be sent to the usual editorial address.

Once complete, entries should be e-mailed to doomcompo@acornuser.com along with the completed level info template which can be found on the disc. Alternatively, they may be mailed on a floppy disc to the editorial address. The closing date for entries is the 14th of May and entries will be judged by a hand-picked group of experts with the result appearing in the August edition.

The rules:

Every competition has to have some rules so here are some for you to stick to if you're entering this one:

- The competition closing date is Friday 14th May, entries received after the closing date will not be judged but may still appear on a future cover CD-ROM.
- The judges' decision is final. No correspondence will be entered into.
- The maximum file size for entries is 300K. Anything greater than that will not be judged.
- Competition entries may be included on a future covermount CD-ROM, if you don't like it, don't enter.
- No cash alternative is available, in the event of non-availability of the published prize, an alternative prize of equivalent value will be awarded.



Don't make your level as boring as this

Heretic and *Hexen*

When people talk about 3D walk-about games, we all think of titles such as *!Doom*, *Quake* and even *Quake II*. However, *!Heretic* and *!Hexen* are an often overlooked pair which arrived between the blockbuster *Doom* and *Quake* PC releases.

The *!Heretic and !Hexen* double pack is the latest offering from conversion masters R-Comp Interactive. This pair of titles uses a game engine very similar to that used in *!Doom*. Although *!Heretic* and *!Hexen* were sold separately in their native PC territory, the games compliment each other to such an extent that R-Comp have bundled the two together along with an expansion pack for a very reasonable £32.50.

As is usual with R-Comp's PC conversions, the game is supplied in its original PC packaging along with three discs containing Acorn player applications. Installation is childsplay and the high quality front-ends that we have come to expect from R-Comp are also included with this release.

Heretic

!Heretic was the earlier of the two releases when they first appeared on the PC platform. The game engine itself doesn't really offer much over the now classic *!Doom* with the exception of the ability to look up and down and also the addition of a power-up which enables flight. However, the design of the levels and the almost seamless theming of the whole game are what make it different from the earlier titles of this genre.

As I mentioned in the preview, a distinct magical twist is built into both titles. An inventory of power-ups and spells allows the selection and use of power-ups when required rather than upon picking them up in the game. This is a welcome feature over titles such as *!Doom* and *!Quake* where power-ups such as health packs and invincibility have to be used immediately and cannot be stored for future use. A number of unique power-ups exist in *!Heretic*.

The *Morph Ovum* is one such bonus, when used, this spell will transform everything within its range into small chickens for later extermination with even the weakest weapon. Although the weapons in *!Heretic* do not lack imagination, the majority of them are rather low powered.

Many of the weapons provided take an awfully long time to kill the stronger monsters which can make the gameplay a little tedious on the first few levels. Once the *Phoenix Rod* (*!Heretic's* own implementation of the rocket launcher) becomes available though, the ball's very much back in your court and even the toughest baddies may be eradicated with only a couple of direct hits. However, this weapon will inflict a fair bit of damage on you if you're too close so it's one of those ones that's best used for long range work. Overall, the spread of weaponry available is quite good but it could be better.

!Heretic will run quite happily on any Risc PC or A7000 but, as with most of R-Comp's titles, options to boost resolution and colour depth for higher end machines are included. One rather nice boost available to StrongARM users is the bi-linear filtering option. This is controlled by an in-game 'cheat' code which is fully documented in the manuals and, without going into too much detail, it prevents the horrid pixellation which used to occur when close up to a wall in any sort of 3D walkabout game.



I didn't kill your cow, honest!



Come here little birdie...

This title is bound to be compared with *!Doom*. In my opinion, *!Heretic* lacks a little something that *!Doom* has. However, I did notice that although *!Heretic* seems easier to complete than the *!Doom* titles, the gameplay is very different and the game does, in fact, contain an extra two episodes over *!Doom*. The nice thing about *!Heretic* is that the later levels are, for the most part, made harder with more devious and complex puzzles rather than a *!Doom* like *"let's chuck loads more monsters in and make the game harder"*.

Hexen

!Hexen was originally released a couple of years after *!Heretic* and as you might expect,



it's that little bit better as a result of the lessons learnt from the first release. Although the *!Heretic* and *!Hexen* game engines are almost identical, *!Hexen* requires slightly more processor power so to get any sort of decent colour depth or resolution, a StrongARM processor is highly recommended for this title.

!Hexen features a far better all-round gaming experience than its sister, *!Heretic*. This title is definitely the more addictive of the two and the complex puzzle-based gameplay is very absorbing. In *!Hexen*, groups of levels are based around central 'hubs' which act as gateways to seven or so further levels. Switches are spread around each level, some of which will allow access to a new level, others to previously closed areas of an already explored level.

The scope of character movement has also improved over that present in *!Heretic*. Jumping is now supported along with some rather cool slippery ice where your character's inertia becomes very apparent especially when trying to jump across stepping stone type arrangements. Water currents are put to better use in *!Hexen* than in *!Heretic* and small baskets which explode when fired upon often reveal hidden bonuses.

Upon starting a game in *!Hexen*, you are offered the choice of which character to play throughout your turn. Three characters are available; *warrior*, *cleric* and *mage*. As you may expect, the *warrior* is good at fighting and has excellent strength whereas the *mage* uses magical powers to his advantage. The *cleric* comes somewhere between the two and, in my experience at least, should be avoided since the old adage 'jack of all trades, master of none' is applicable here.

Each character also has his own weaponry and will also use the artifacts available throughout the game in different ways. This adds to the longevity of the game since although you'll be going through the same levels again, a different character adds a touch of originality to the game. Powerups are dealt with in the same way as in *!Heretic* with an inventory from which items can be selected for use once collected.

Graphically, *!Hexen* lies somewhere between *!Heretic* and *!Quake*. A wide range of graphical styles are present, allowing for a number of nicely themed levels. There are also more opportunities to interact with the scenery in *!Hexen* with its nice stained glass windows which actually shatter when fired at. Another notable new feature in *!Hexen* is transparent walkways which open up numerous possibilities for devious puzzles and secret areas.



The same texture filtering options are available as seen in *!Heretic* and on a StrongARM machine, the game will run quite happily with bilinear filtering turned on in a suitably large 24-bit screen resolution. *!Hexen* is playable on lower-end Risc PCs but the forthcoming RISC OS 4 upgrade should produce a notable increase in performance.

As with many other R-Comp releases, a full set of add-on levels are included for use with *!Hexen*. *Deathkings of The Dark Citadel* provides 20 new levels along with six multiplayer levels designed with deathmatch play in mind. There's nothing significantly new in *Deathkings* but as you may expect, the extra levels do add nicely to the original game.

Multi-player

Both LAN (local area network) and serial link drivers are supplied with *!Heretic* and *!Hexen*. R-Comp kindly lent me a second Risc PC to test these multiplayer options and I'm pleased to be able to report that both LAN and serial play work just fine. Serial play against PCs should work in theory but contact R-Comp at the address below for up-to-date information.

Games like these are always fun when you're fighting a human opponent as opposed to a dumb computer and that applies as much to *!Heretic* and *!Hexen* as it does to the mighty *Quake*. On a slightly different subject, this review has given me a chance to test the multiplayer support in *!Doom+* and that also works faultlessly over LAN and serial cable.

Overall

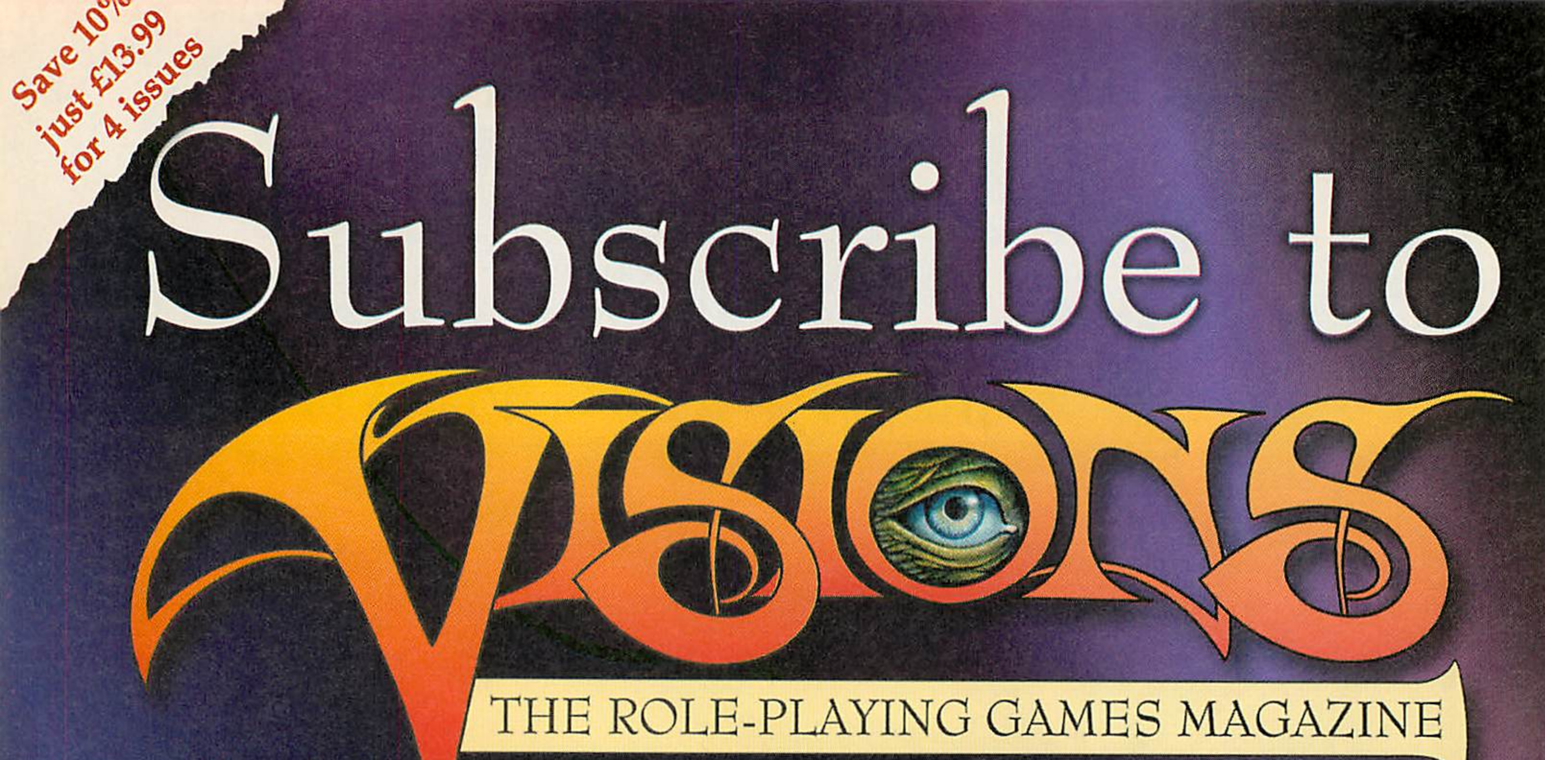
To conclude, this *!Heretic* and *!Hexen* double-pack outclasses *!Doom II* by a long way. Although some might say they're just "*Doom* with a crossbow", they do refine the genre to something even more addictive.

At £32.50, this should be in every StrongARM owner's collection, ARM6/7 users won't be disappointed either. AU

Product details

Product:	Heretic & Hexen double-pack
Price:	£32.50
Supplier:	R-Comp Interactive, 22 Robert Moffat, High Legh, Knutsford, Cheshire WA16 6PS
Tel:	01925 755043
Fax:	01925 757377
E-mail:	rci@rcomp.co.uk
WWW:	http://www.rcomp.co.uk/


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Birthday boys **Dave Acton** and **Dave Lawrence** unwrap another...

star info

Happy birthday to us!

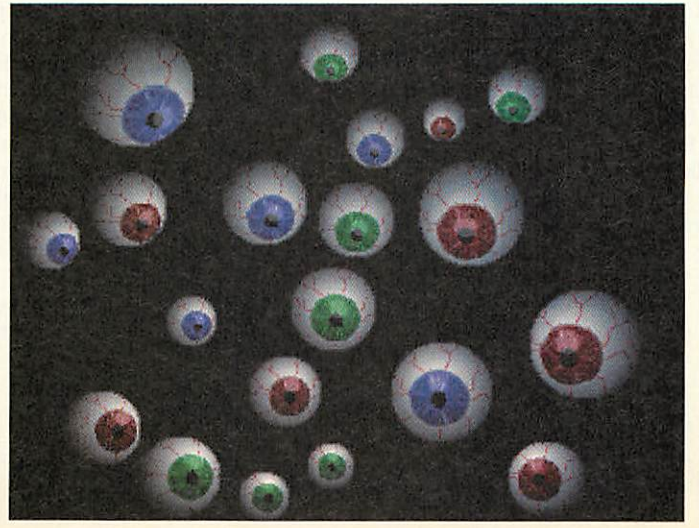
We've just done a very complicated sum on the office abacus and worked out that this is the 100th edition of *info! The first appearance was in issue 108 back in July 1991, it was formed from the amalgamation of *Risc Revue* (edited by DA) and *Eight Bits* (edited by DL). To give you some idea of the passage of time, memory cost £40 a megabyte, now you get 32Mb for the same price. Harddiscs were £470 for 80Mb - you can't even spend that much on an IDE drive these days, £379 will get you 25Gb though.

The latest games were *!Chock's Away* and *!Twin World* and even then we were being promised that more games ports were on the way. Our first submissions included some Lissajous figures from Michael Attenborough, a squiggly game from Barry Wicket, a Spritefile tip from Graham Hick and a whole three pages about different sorting methods! The long running themes of bendy patterns, daft games and helpful hints were already in place...

What an eye-saw

Author: Mark Adcock

Welcome to **Mark Adcock** corner. We have three submissions from him this month, the first is a bit of an *eye* opener. *Eye* expect you can *see* what the program does from the *eye*llustration – it draws eyes. An assortment of eyes of different colours and different sizes are distributed randomly about the screen, they will then either follow the mouse pointer, or if you leave them to their own devices, they will bounce about merrily by themselves.



If you wish you can edit the textures used, the only stipulation being they must by 64x64 8bpp sprites. You can also change the number of eyes by editing the variable num_eyes% at the end of the program. This is the maximum number; once the screen is packed no more will be added. The program uses a table to map every pixel of square parts of the screen to a point in the randomly chosen source texture. Onto the x and y positions within the texture x and y offsets are added; these depend on the position of the mouse.

This table also contains the brightness of the eyeball at that particular point. If the brightness value is 0, then we have reached the part of the square that is blank (part of the background not the eyeball). In this case one of the other entries in the table contains a value to add to the current plot address.

By skipping over the blank parts of the screen the routine can be about 20% faster. If the brightness is non-zero, another table is used to convert the source texture's mode 13 colour information into a 24bpp word at the right brightness. This is then poked to screen.



Not waving but drowning

Author: Mark Adcock

Mark Adcock's second program this month is *Distort*. The program asks you for the name of a sprite which must be in mode 13 and either 16, 32, 64, 128 or 256 pixels a side (the sprite must be square). It then tiles it in a 256 by 256 box of a mode 13 screen.

A sine-wave is used as a table of horizontal offsets. You can change the frequency by changing frequency%. A value of n means the sine-wave fits n times into the height of the screen; that is a wavelength of 256/n. The sine-wave table is moved up the screen by one pixel every Vsync, so *n* must be an integer to ensure the start and end offsets of the table line up. The amplitude of the wave can be changed by changing Amplitude%.

At the same time, the screen is also moved up and down. The velocity of this movement is determined by another sine-wave. The wavelength of this wave can be changed (by altering length%) so you can get the two sine-waves drifting in and out of phase. The amplitude in two hundred and fifty-sixths (1/256ths) of a pixel is amplitude2%. To this wave a constant is added, above0% (in 1/256ths of a pixel). This means that many different types of movement can be catered for. You can get it to move up and down but never move overall (eg. amplitude2%=256 above0%=0), move up all the time at a constant rate (0,256), move up but at a changing rate (256,512) or move up for most of the time then down a bit (512,128).

For a sprite that is, say, 64 pixels wide, the same pattern is repeated across the screen four times. The original code didn't account for this; it just plotted a line horizontally, recalculating the location of the sprite each time, so that x_coordinate_of_sprite = x_coordinate_of_screen MOD 64. This version doesn't do this; in the case of a sprite 64 pixels wide it would only have to calculate a strip 64x256 and duplicate it four times. To speed things up even further, one word is poked instead of four bytes. This gives a speedy frame rate of 70fps on a Risc PC 700 for sizes below 256x256 and 35fps at 256x256. On an A5000 you get a reasonable speed too. If you take out the VSync it really flies for smaller sizes but you get a lot of tearing.



Up and atom

Author: Daniel Barron

Prompted by Adam Granger's *Chemistry* (Nov '98) and *Carbon* (Dec '98), **Daniel Barron** has sent in application *Structurer*. This is a fiendishly clever program that converts drawn organic molecules into their IUPAC name (International Union of Pure and Applied Chemistry). Daniel explains that the interface is very crude and was knocked up in a couple of hours, the point of the program is demonstrate the IUPAC 'engine' that he has spent 500 hours developing!

Double click and select your monitor type, this simply controls the screen mode to make sure the writing doesn't come out ridiculously small. You are now able to draw molecules. To add an atom first select the atom type by pressing the appropriate key, for example C for Carbon (see table for full list) then click with the left-hand mouse bottom (I think you mean button – Ed). The program will not allow you to place atoms too close together. To remove an atom Adjust-click over it. If you have added bonds to the atom they will be removed as well.

C – carbon
O – oxygen
N – nitrogen
F – fluorine
I – iodine
B – bromine
P – phosphorus
S – sulfur
L – chlorine
E – silicon

To add bonds select the bond order by pressing 1, 2 or 3. Select-click on the first atom then Adjust-click on the second. You can abort this process by pressing A. You can draw a bond over the top of an existing bond to replace it with one of a different order. To remove a bond altogether select '0' then proceed as before.

When you are happy with your molecule [now there's a sentence you don't write every day – DL] click Menu and the IUPAC parser will be kicked into gear. Press the Spacebar to continue drawing.

The good news

The current version of the program can handle:

- rings
- chains
- some non-carbon chains and rings (nitrogen, silicon and phosphorus)
- ketones
- aldehydes
- cyanides
- carboxylic acids to a large extent
- nitrosos
- thiols
- amines
- imines
- halogens (Cl, Br, I and F)
- alcohols
- multiple hydrides
- complex hydride depth to at least 3 levels
- multiple bonds – double and triple
- multiple bonds to the parent hydride from a sub-hydride of order 2 and 3
- all IUPAC punctuation name standards associated with the above
- nitrogen, carbon, silicon, [hydrogen], oxygen, halogens, phosphorus,sulfur

The bad news

It can't (yet) handle:

- esters, ethers, or similar (R-C-O-C-R')
- acid halides (but easy to add with hetero-chain finder tool)
- hydroperoxides (again easy to add with hetero-chain finder tool)
- peroxides
- salts of carboxylic acids (not too hard to add)
- thiolates
- fused rings
- more than a simple guess at the parent hydride
- functional groups not mentioned above
- non-systematic rings, (for example benzene)

Basically avoid -C-O-C- or, less importantly, more than one ring in a structure.

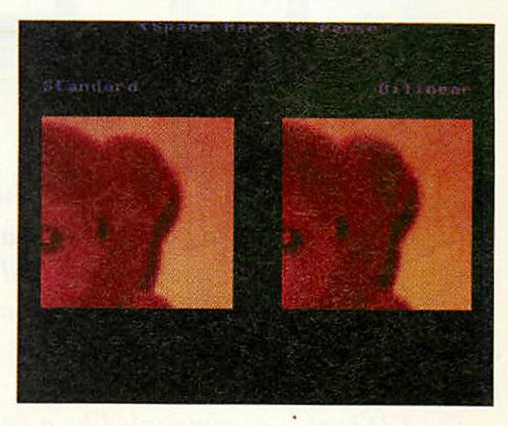
Daniel is working on a Java version, so you should be able to check up on your molecules on the Web in the near future.

Smoooth zooom

Author: Alain Brobecker

BiZoo is not an exhibit of hermaphrodites – it's a visual demonstration of the difference between a standard zoom and a bilinear zoom. The routine was written by **Alain Brobecker** three weeks after buying a Risc PC. More commonly known as *bilinear filtering*, this sort of graphical calculation is now a standard feature of 3D accelerator cards in PCs and the latest generation of games consoles. Run *ClickRPC!* to see the effect (*ClickOld!* for the pre-Risc PC version), the difference is quite apparent. Hardwiring this ability into 3D cards relieves the poor little processor of the not inconsiderable amount of adding-up required. Most cards can now support trilinear filtering as well, Alain hopes to demonstrate this another time.

The code *is* commented, but for the 10 cents tour... Suppose u,v are the texture coordinates for the pixel to draw on the screen, the standard zoom routine would texture[INT(u), INT(v)]. The bilinear (linear for each variable) zoom uses the fractional parts of u and v to combine the four pixels nearest to [u,v]. Suppose u and v are both equal to 1/4, and U=int(u) and V=int(v) we would use



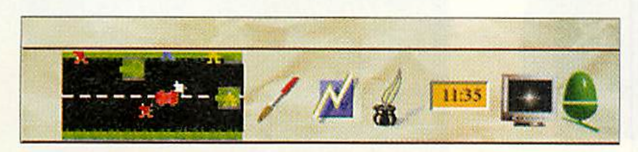
3/4*3/4 of the value of [U,V], 1/4*3/4 of [U+1,V], 3/4*1/4 of [U,V+1] and 1/4*1/4 of [U+1,V+1].

If the problem was set in a single dimension we would say that since u is at a distance of 1/4 to U and 3/4 to U+1, U would give more of it's 'energy' to u. The ratio is linearly proportional to 1-distance. With the two dimensional problem we extend this reasoning to think in terms of areas rather than distances.

Well officer, it was like this...

Author: Owain Cole

We can always rely on **Owain Cole** for a game that goes against the grain. Quite literally in this case. It's also entirely played on the iconbar and fits nicely into the games-you-don't-realise-you-are-playing category started last November with Owain's iconbar one armed bandit. *!Splat* is a charming little game of Slaughter and Butchery. That's Mr. S. Laugther and Mr B. Utchery, honestly. We'd never condone violence. Run the game and move the mouse up and down to move the red car. The aim of the game is to avoid the tanks and other cars speeding in the opposite direction and try to mow down any by-standers and sheep to get kill-points. Ahhh, hang on, I'm sure Owain means 'rescue any by-standers and sheep to get bonus-points'.



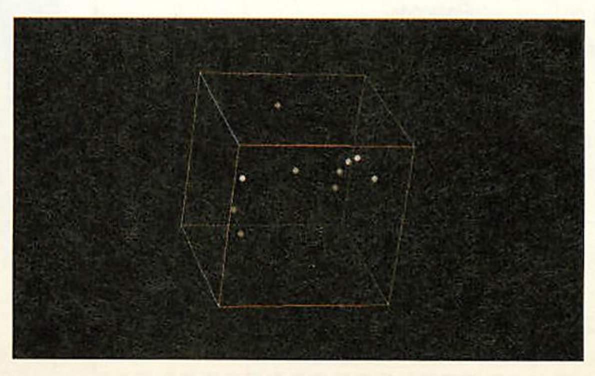
The more things you dispatch (rescue) the faster your car goes. The faster your car goes the more likely you are to plough into oncoming traffic ending your joy-riding (rescuing) spree. You can pause the game at any time by adjust-clicking on the icon. Select-click starts a new game.

My balls are always bouncing

Author: Mark Daniel

Cube27 is a demonstration of balls in a box. If you were thinking of buying some balls in a box and weren't sure if it was going to be worth it or not, you could first run **Mark Daniel's** program to get the idea. If you then thought that balls in a box was a good thing you could head down to John Lewis to buy some. Alternatively if balls in a box was not for you then you can rest happy knowing that you hadn't wasted your money.

Mark says that the code is heavily based on Paul Thompson's Basic 3D graphic routines that appeared in January 1998, although Mark's own program is written in C. You can rotate your box by moving the mouse and change the number of balls in the box using the Menu and Adjust mouse buttons. High res (mode 27) and low res (mode 12) versions of the program are available. Mark has also provided a simple depth cued version. This is achieved by cutting the lines of the box into four segments and colouring each piece appropriately.



In this version, the mouse buttons move your box in and out of the screen, except for some reason the depth cueing then goes mad. The balls are not scaled either so, (if you ignore the psychedelic box), the effect of making your box smaller actually appears to make your balls bigger.



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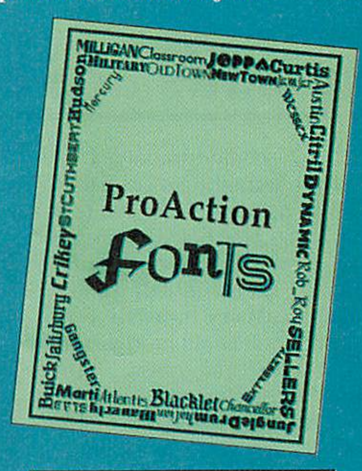




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A blob on the landscape

Author: David Gamble

We think our quest for the ultimate lava-lamp is nearing it's conclusion, although knowing most *info contributors we'll still be receiving better and better examples in 1900. Sorry, 2000. You'll have to wait until next month to see Alex Waugh's *Lavalump* (oo-er!) but until then you can amuse yourself with *Blobby* from **David Gamble**. Run the program and enter 1, 2 or 3 to see some of David's preset demos, alternatively select option 0 and configure the parameters of the program yourself. There are some very strangely named options, just try fiddling with them all.

David says he uses Wyvil, McPheeters and Wyvil's method – we're not sure if these people are real or not, they may be just a firm of solicitors. The method goes something like this:

The Blobby concept entails that objects merge together. The model is based on a modelling of the objects as point sources. The intensity for a point is governed by a formula of distance, which is summated for each point to give a final result. The equation used is:

$$C(r)=-(4/9)r^6/R^6 + (17/9)r^4/R^4 - (22/9)r^2/R^2 +1$$

when 0<=r<=R, and 0 otherwise. NB – this has a finite limit

r = distance from source to point

R = max distance from point to source almost 'intensity')

If we re-write this equation, several factors become clear:

$$C(r)=-4r^6/R^6 + 17r^4/R^4 - 22r^2/R^2 +9$$

Now, supposing we need to calculate r. Cartesian geometry defines r to be:

$$r=sqrt(dx^2 + dy^2)$$

If we look at the equation, we will see that the sqrt is entirely unnecessary. Define $D=r^2 = dx^2 + dy^2$

$$C(r)=-4D^3/R^6 + 17D^2/R^4 - 22D/R^2 +9$$

Now, Let us define R^x as a constant term, which it will be for these equations.

$$C(r)=-4D^3/R_2 + 17D2/R_1 - 22D/R_0 +9$$

Again, let us redefine R0,R1,R2 to C0,C1,C2, where:

$$C_0=1/R_0$$
$$C_1=1/R_1$$
$$C_2=1/R_2$$

And the equation becomes:

$$C(r)=-4D^3C_2 + 17D^2C_1 - 22DC_0 +9$$

And as a further redefinition, let us create F0,F1,F2, where

$$F_0=(-22^*C_0)/9 = (-22/R_0)/9 = (-22/R^2)/9$$
$$F_1= (17^*C_1)/9 = (17/R_1)/9 = (17/R^4)/9$$
$$F_2= (-4^*C_2)/9 = (-4/R_2)/9 = (-4/R^6)/9$$

And so, our equation becomes

$$C(r)=D^{3*}F_2 + D^{2*}F_1 + D^*F_0 +1$$

And so, this becomes nothing more than 5 multiplies, and 3 additions, excluding the equation required to calculate DATA. Alternatively, you can calculate a square lookup table, with a source centred in the middle.

What this means in practice is you get some nice blobby colours on the screen when you run the program.

News flash – fish crash

Author: Toby Hunt

We have just received news from Toby Hunt that his fish program from last month does not work correctly on A5000s. A new version is available on the cover disc. We are sorry for the delay and any inconvenience caused. No, really, we are. Honest.

There is no black and white

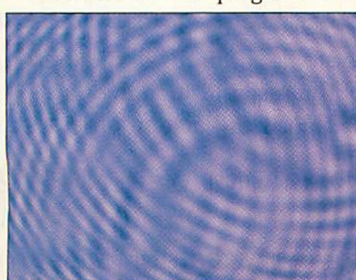
Author: Mark Adcock

Our final visit to Adcock Corner this month is in seven parts. Mark has written a series of short (all less than 1K) programs that all use interference patterns to generate their output.

GryPattrn1 first picks several randomly positioned control points. The colour of every pixel is proportional to the sum of the SINes of the squares of the distances between the control points and the pixel itself. If you get a boring pattern try again – the pattern generated each time will be different because as well as having a random number of randomly positioned points, the wavelength of the sine-waves is not fixed (in that you multiply the squares of the distances by a random constant before you SINe them.).

Apply a few tweaks to this and you get *GryPattrn2* – a pseudo-3D version resembling a range of hills, though admittedly they are blue and purple. *GryPattrn3* and *4* are the definable palette 256 colour mode versions of *GryPattrn1* and *2*.

The rest of the programs use 24-bit colour modes only. *RGBPattrn1* just needed a few subtle tweaks. Instead of using a single grey scale as a palette, determined by a single sine-wave, the Red, Green and Blue levels are all determined by different wavelength/amplitude sine-waves. The different wavelengths give you a strange wrap-around palette (try running the program with just 1 point). What's more, each point has different amplitude/wavelength sine-waves associated with it. The program will produce a wide range of different effects, often it looks good with just 1 point, but most values below 5 look interesting as well.



RGBPattrn2 is the same as *RGBPattrn1*, but gives a brighter, psychedelic output (try with 1 point or <5 as usual)

Finally, in *HSVPattern*, the Red, Green and Blue values for each pixel on the screen are added together and then used as the Hue in a HSV palette. Because the RGB waves have different wavelengths/amplitudes, they interfere with each other, producing even more weird effects.

*QUIT

All submissions if you please – applications, doodles, hints, tips, molecules, modules or moles, to:
***INFO, Acorn User, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP**
or, e-mail us (including your real address please) at: starinfo@acornuser.com
No e-mails longer than 100K please. Screenshots, background info and customisation ideas are always most welcome. Please put your name, address and program title on every disc and include a text file containing your name, address, disc contents and program details. An SAE will ensure your discs are returned. If you are responding to one of our challenges, please mark your envelope accordingly. *info submissions only please.

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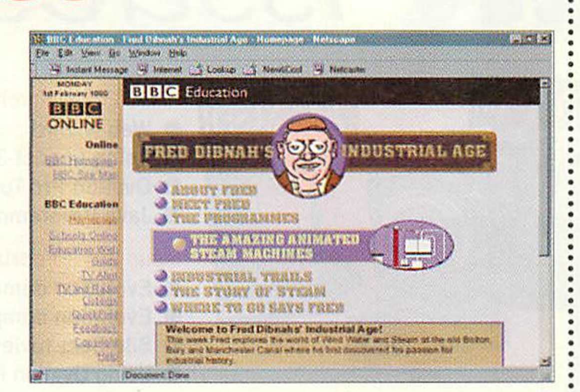


Virtual rust

If you've been enjoying Fred Dibnah's tour of the Industrial Age on BBC 2 and want to use it as a History resource in the classroom then you're in luck, the world's most famous steeplejack now has a Web site for you too – www.bbc.co.uk/ education/ dibnah

As well as re-discovering important sites of industrial heritage and talking to fellow enthusiasts of this bygone age, the plain-talking Lancashire presenter is calling on Internet users to get to grips with this dynamic period of change. As well as information on Fred, you can play with the animated steam machines, and find out more about how to discover industrial history on your own doorstep.

Fred says: "I'm not one for computers, but it's great to think of people getting virtual dirt under their fingernails. Our industrial history is as important a part of our heritage as our great houses, abbeys and castles, and in many cases these sites provide real hands-on involvement in history. It's a real thrill to be involved in a project which makes it so easy for people to engage directly with a fascinating period of Britain's history."



Around the globe

The class has been recording data from the local environment, they've made some interesting discoveries and discussed their methods and approaches. The objectives have been met and the topic is over. So what do you do with all that information? Enter, *GLOBE*.

This is an international programme which takes the measurements of the local environment made by an individual school and integrates them with those from other schools over the Internet. The aim of the project is to enhance worldwide environmental awareness and scientific knowledge, but also to let pupils increase their science, numeracy and ICT skillbase.

Started in 1994 by US Vice-President Al Gore, there are now over 5,000 schools from 70 countries involved. UK teachers are provided with a teaching package linked to the National Curriculum with standardised methods for pupils to measure aspects of the environment, a satellite image of the area around your school, a full-colour cloud chart, and a range of worksheets.

Once recorded, information is sent to the Web site – www.globe.org.uk – where it is integrated with the data from other schools all of which you can access for comparison or analysis. There's a £10 registration fee, and if your school hasn't got the instruments needed for the experiments, the manual will show you how to make some of them while your nearest GLOBE centre will loan you the rest.

Wet and webby

During April and May schoolchildren can design their own ocean voyages, while 'talking' to the explorers of the 15th and 16th centuries, all via the Internet. Ocean Explorers (http://www.onlineclass.com/Oceans/ index.htm) is an eight-week online adventure for 9 to 14-year-olds providing scientific and historical backgrounds to the great ocean expeditions of the Age of Discovery, charting the journeys of John Cabot, Amerigo Vespucci, Ferdinand Magellan and Vasco da Gama. You can talk to these great sailors by e-mail, learning more about their life and times.

With obvious links to the History and Geography curricula, children are also engaged in classroom activities to design an imaginary voyage by choosing a route, provisioning the ship, predicting the weather, plotting the course and keeping journals of a lively, imaginary adventure.



Auntie beeb's digital baby

The beginning of June sees the launch of BBC Knowledge. One of a host of new digital services to hit the UK it promises a practical learning resource for pre-schoolers to adult learners. The aim is to combine the traditional television programming with the more interactive digital TV and the Internet. Free to those with digital TV - satellite, terrestrial or cable - it will initially be broadcast for six hours a day. Half the output will be new programs with the balance consisting of updated existing factual programmes.

Explorer update

Granada Learning (0161 827 2927) may be moving away from the Acorn platform, but there are some exciting programs coming out on CD-ROM for RISC OS machines in the next two months. As well as their SATs revision programs (Practise Maths at 7 and Practise Science at 11) Science Explorer 1 is available now with Science Explorer 2, Exploring World Religions and Maths Explorer following in June.

Maths knowhow

With the National Numeracy Project due to be initiated into schools in September, Polydron (01285 770 055) have released a Mathematics Dictionary on CD-ROM. Priced at £35 not only do you get a detailed and highly graphical dictionary but a further two sections providing both topics and resources, and a third section of some 80 games and activities.

A standard dictionary page contains a definition, description (the words can be read to you) illustrated by a photograph, animation, diagram or video clip as well as the root definition of the word. For instance, capacity comes from the Latin capacitas meaning to take or hold. A further section provides a list of related subjects which will take you to a new definition page. Suitable for Key Stages 2 and 3 the 1000+ pages can all be printed out.

Contacting me

You can contact the Education page by writing to me, Pam Turnbull at Acorn User, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP or e-mail: educ@acornuser.com

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Get literate

Some schools have found it difficult to integrate ICT into their Literacy Hour. **Pam Turnbull** examines a new product to make word level work a pleasure for everyone

Available as two separate programs for Key Stage 1 and 2, *WordWork* provides resources and activities for word level work. You can dip into this or follow the week-by-week sections, all of which are closely tied to the National Literacy Strategy. The format of the two programs is similar, providing around 40 activities for each year group.

Some of the activities work best in whole class sessions, in the whole class word level, or in plenary sessions, while other games also work well as individual carousel activities. The program provides for these different uses (and audiences) with three sizes of display.

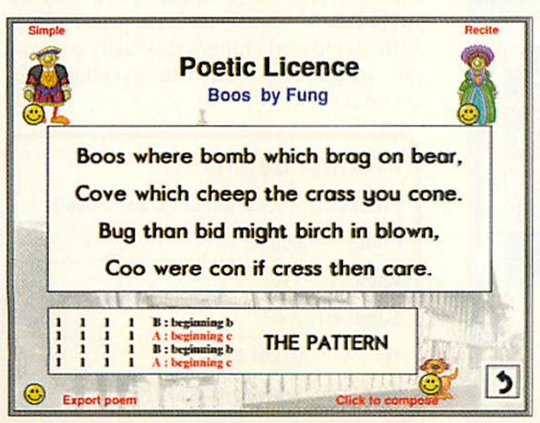
WordWork 1

Loading is very straightforward and it's nice to see programs of this quality on floppy disk (although you will need a harddisk machine). Set at the seaside, the graphics are great – full of detail and humour. On-screen instructions are minimal but the manual is detailed, giving sound and practical advice on best use of the program in the classroom. You're presented with a choice of five options, the first of which – Preset Searches – provides wordlists for Reception and Years 1 to 3 which are split into relevant sections with *Phoneme: ai (train)* being one of 46 on offer for Year 1. Wordlists can also be exported for you to use elsewhere.

With your list chosen, it's now time to get to work. The choice of activities using one word lets you browse the list with your class to point out peculiarities or spelling rules, or how about a few games where children suggest a letter which can be removed while keeping a *real* word, or they could insert a letter. With the latter the program will give clues by highlighting letters on the alphabet bar and aid the teacher by showing a faint grey image of the next word coming up. Or how about changing a letter or finding words within words or even revealing a word a little at a time? These work very well as group activities and the design of the program allows for good levels of differentiation.

Another set of activities work with two words. Again you can browse, but a very nice activity for this age range is *Word Shapes* which presents two words and one word shape with the children deciding which is the hidden word. Speech is used throughout so any word clicked on will be spoken, whether playing at putting words in alphabetical order or deciphering backwards words or even merging two words to create new ones in *Portmanteau* (*breakfast* and *lunch* to make *brunch* for instance). Or how about guessing a hidden word from the one you can see? Wordlists which work well with this – such as antonyms – are highlighted in the main selection screen.

But there's more. A *Sorter* lets you decide on up to three categories you want your wordlist split into, for instance nouns, adjectives and verbs, while *Shannon's Game* provides a type of Hangman.



The detail in this program is superb and you are not confined to the Preset Searches as you can create you own lists by specifying beginning, end and middle letters as well as the number of letters in a word.

The *Onset, Rimes, CVCs* section lets you specify what onset or CVC combination you're working on at present and play a group or class recognition game – a superb reinforcement activity for a plenary session. *The Blender* lets you create words, deciding if they are real words or not from 22 possible categories. And finally, *Starts and Ends* makes a good consolidation exercise on beginnings and ends of words.

WordWork 2

Very similar in format, apart from the fact that you can change the characters to follow a history theme with 17 sets of correctly dressed bods from Pre-historic to Futuristic; you are again offered the chance of following the Preset Searches or devising your own.

There are two search options: the simple variety as in WordWork 1 but also a more complex and advanced option which might be a little overwhelming for some. But it's actually very straightforward and very useful if you want to work in more detail on a specific area such as compound words using *horse*. However, you could easily get your money's worth out of this package by sticking to the Preset Searches for Years 3 to 5 with a Misc list for Year 6 and beyond.

The one and two word activities are the same, as is the sorter and Shannon's Game. *Find Rhymes* is a new activity and is self-explanatory and good practice for syllable work, as is the final activity *Poetic Licence*.

This brilliant little activity provides you with a grid. You play around with the number of syllables, rhyme pattern and alliteration, even altering the language from simple to archaic. The program then creates, and recites, a poem for you – great fun and a very useful tool.

The detail in WordWork is fantastic. Not only does it support teachers in the word work elements of the NLS but it makes playing with words and language fun. Whether you'll use this for whole class work depends on your classroom set-up, but the way the children get involved makes a little extra manoeuvring worthwhile. AU

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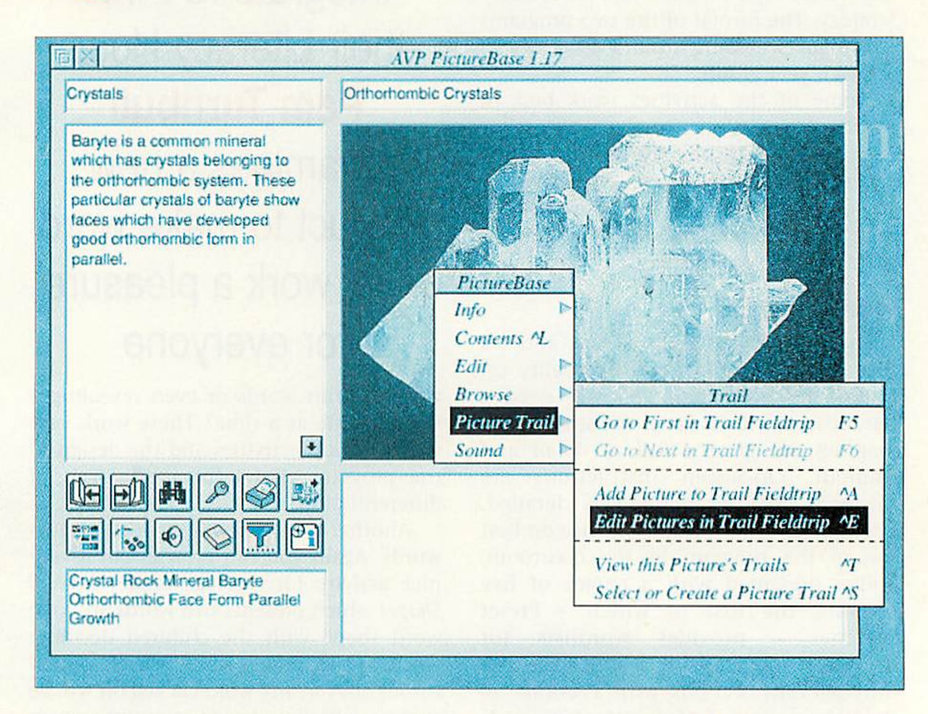
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Know your rocks from your fossils

Whether you're a Nascent paleontologist or revising geography or science, **Pam Turnbull** looks at one package which could have all you need

Another title from AVP's PictureBase range, this one brings together modules on igneous, metamorphic and sedimentary rocks as well as common minerals, crystals, mining, fossilisation and common fossils – eight science modules on one CD-ROM.

Once installed on your hard disk, all you have to do is to choose one of the modules from the contents screen and a list of pictures appears in one of the panes. For instance, *Igneous Rocks* has some 29 images. A button offers you the chance of seeing the first. However, if you're not sure whether the module holds what you need, look at the the right-hand pane which presents a brief textual overview of your chosen module. Scroll through this detailed introduction using the arrow keys on the keyboard or click the picture button to see thumbnail images of the pictures held here.

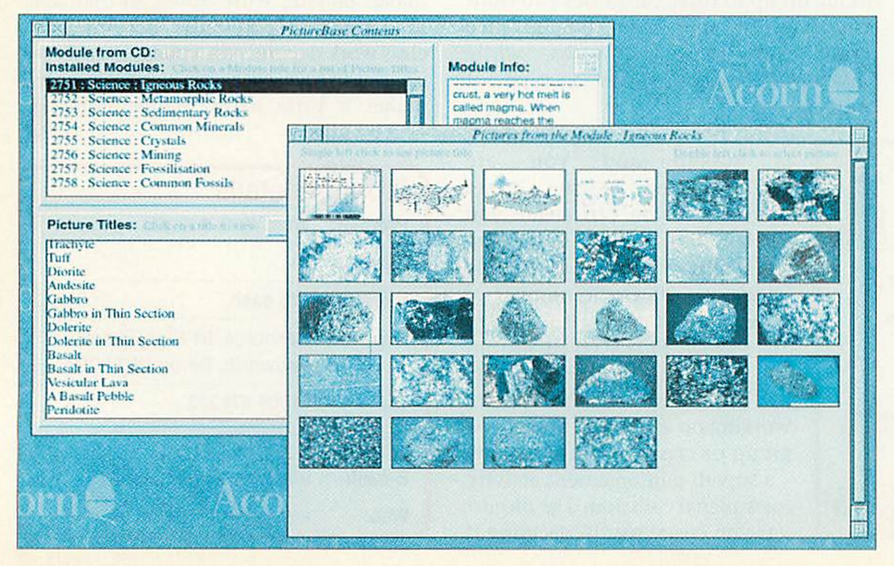


Once you've make your selection and are in the main program, the image comes with an explanation and a space for you to add your own notes, commentary or thoughts. This text and the description and images can all be saved for use in other programs or simply printed.

Navigation is standard to others in the PictureBase range allowing you simple and complex searches, adding these modules to others you've installed if you want. Images are clear and useable, and I particularly like the Trail tool.

You can make your own trails (and then password protect them) of pictures and images, adding your own text and changing the font size, or image display for different types of presentation with text read out loud in an autoplay mode.

My reservations about this are really down to the interface. This is an excellent range which allows you to control access and look. The help is good as is the dictionary/glossary feature. However, the installation and navigation feels a little dated and clumsy especially as it can get in the way of the excellent content. AU



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Revision 13b

Where the *wind blows*

Mike Cook gets his dingle-dangles to play a tune

Many people ask where I get my ideas from, most of the time I can't tell but with this month's project I know exactly. I was hill walking in the Lake District with a friend talking about music and some of the strange instruments I have made over the years. As we gained the ridge an icy blast of wind hit us and I thought that wind chimes might just be a wacky enough electronic instrument to be worth making.

In conventional wind chimes air currents disturb a pendulum causing it to bang into hollow tubes thus creating tones. One of the problems with this is that the sound is always the same, but with electronic wind chimes you can make whatever sound you like and it can be changed at any time. You can also change the mapping of the notes, that's the pitch each tube produces. By utilising the MIDI system you can get a really good quality sound, but even if you haven't got that the system sounds are not too bad.

The basic idea is to use reed switches and a magnet to feed information into our computer to turn into sounds. A reed switch is a small glass tube with a magnetic sensitive switch in it. As a magnet is placed near the switch it closes, and when the magnet is removed the switch opens. The main use of these switches are in burglar alarms, where the switch is embedded in the door frame and the magnet sunk into the door. When the door is closed so is the switch, if the door is open or the switch wires are cut the open circuit can be made to trigger an alarm.

The electronic circuit is simple and is shown in Figure I. Six reed switches are connected between the first six bits of the printer port and earth. Each switch also has a pull-up resistor up to 5V. However, as there is no 5V supply on the printer port we have to cheat a bit and connect them up to the strobe pin, and make sure, in software, that this pin sits at a logic one.

Fig II: The physical arrangement of the switches

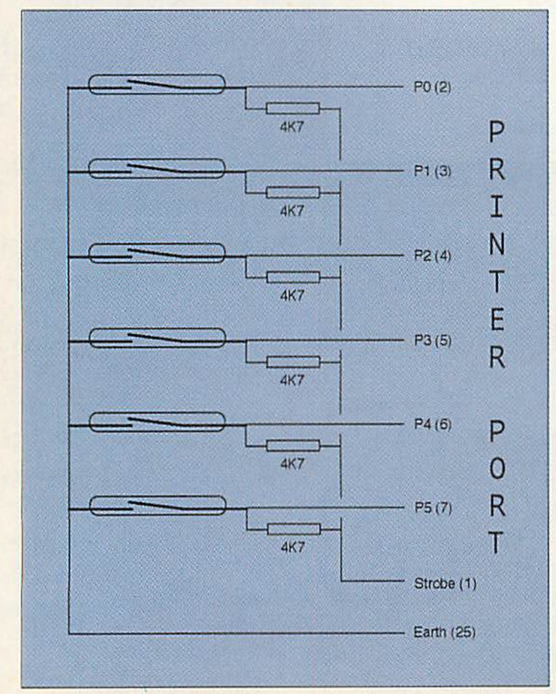


Fig I: The wind chime circuit

Although the circuit is conceptually simple you have to perform a bit of mental topological gymnastics to lay it out. While the physical positioning of the reed switches could be anything, to keep it consistent with my software the switches have to be arranged in a hexagon as shown in Figure II. However, you can arrange them in what ever form you like, you might consider mounting the switches vertically instead of horizontally. I laid out the circuit on a piece of Veroboard and, as I hadn't any 8 core cable, had to use two lengths of 6 core cable instead. You can see my layout in Figure III.

Next we have to arrange this sensor circuit where the magnet can affect it. There are two possible arrangements as shown in Figure IV. In the traditional arrangement a hole is cut in the veroboard and the board is hung from the ceiling using several lengths of string. A longer piece of string is threaded through the hole and a weight attached. A small thin magnet is fixed to the string and arranged close to the hole in the board. Finally a sail or small piece of card can be placed on the lower part of the string to catch any air currents going. The longer the string the slower will be any change.

The other arrangement in Figure IV is perhaps functionally more interesting as it turns out to be a chaotic pendulum. A much larger magnet is placed at the end of a long length of string and arranged above the circuit so that the reed switches trigger as the magnet swings over them. What makes this system interesting is that the switches exert a small force on the magnet each time it swings over them. This gives the pendulum a small tug each swing and so disturbs the basic predictable periodic swing.

The upshot is that you can get some complex patterns of switch triggering that are different every time, this is because it is a chaotic system and so is hyper-

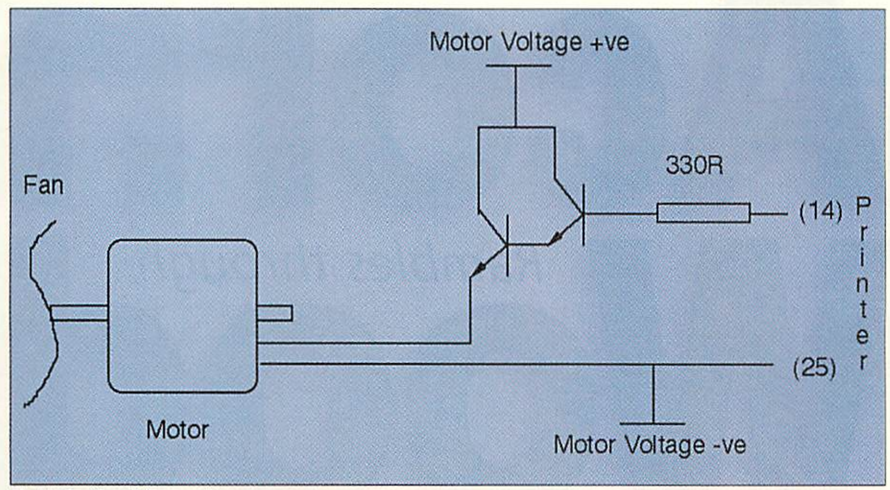


Fig V: Optional fan exciter

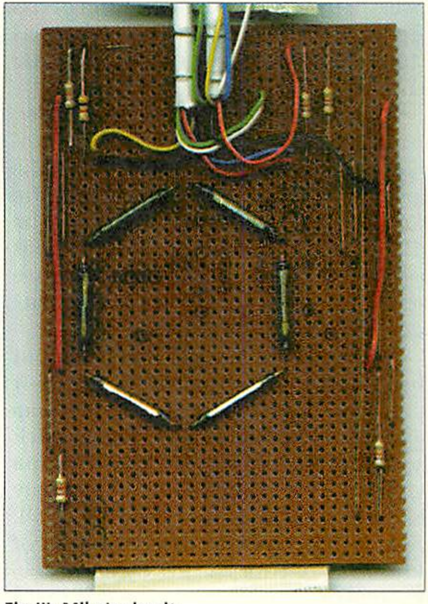


Fig III: Mike's circuit

sensitive to the initial conditions of the swing. In fact this could form the basis of a completely different project, investigating the sensitivity to initial conditions of a chaotic dynamic system. You could measure the sequence and timing of switch closures and see how quickly this deviates from the last swing.

The idea is that you would try to have the same initial conditions, that is the position you release the pendulum. The closer these initial conditions are, the longer the pattern remains the same before deviating. This could form the basis of an excellent science project, and could be performed on any computer platform, however, you have to have a good teacher. I did suggest this as a project for the son of a friend, but his teacher said it was not a good project because there were not enough variables to alter. It's quite appalling the standard of some science teachers nowadays, no wonder there are increasingly fewer physics students at universities.

I used this second arrangement and had a two meter pendulum, make this longer if you can, as this will make for a much slower swing. I placed some extra weight at the end of the pendulum and you could also add a sail to pick up the wind if you want.

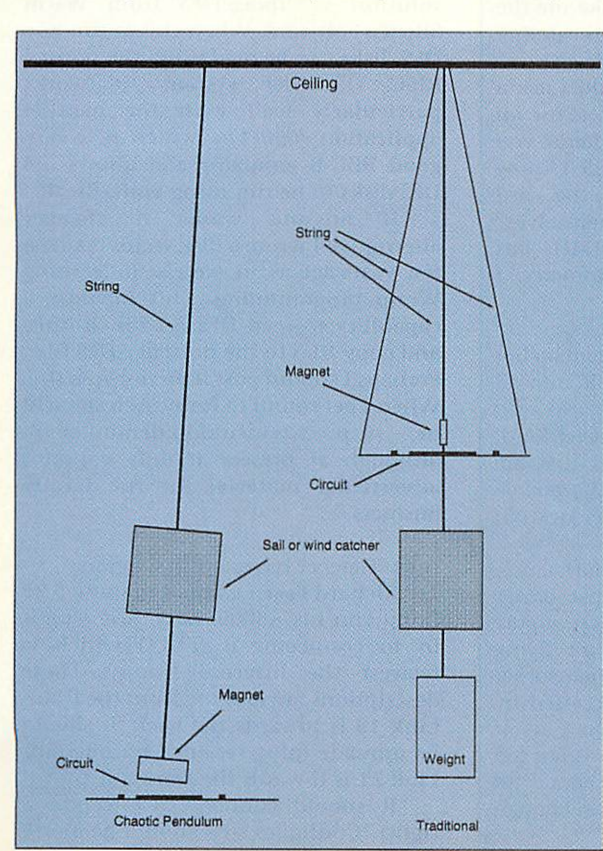


Fig IV: Two possible arrangements for the wind chimes

Now, if you are using this indoors away from drafts you might get a bit fed up having to keep giving it a push, so you can use the circuit in Figure V. This is simply a motor with a fan or propeller on the end. This is positioned to blow on the wind chimes and disturb the system whenever the computer detects there has been no activity for several seconds. This brings me neatly on to the software.

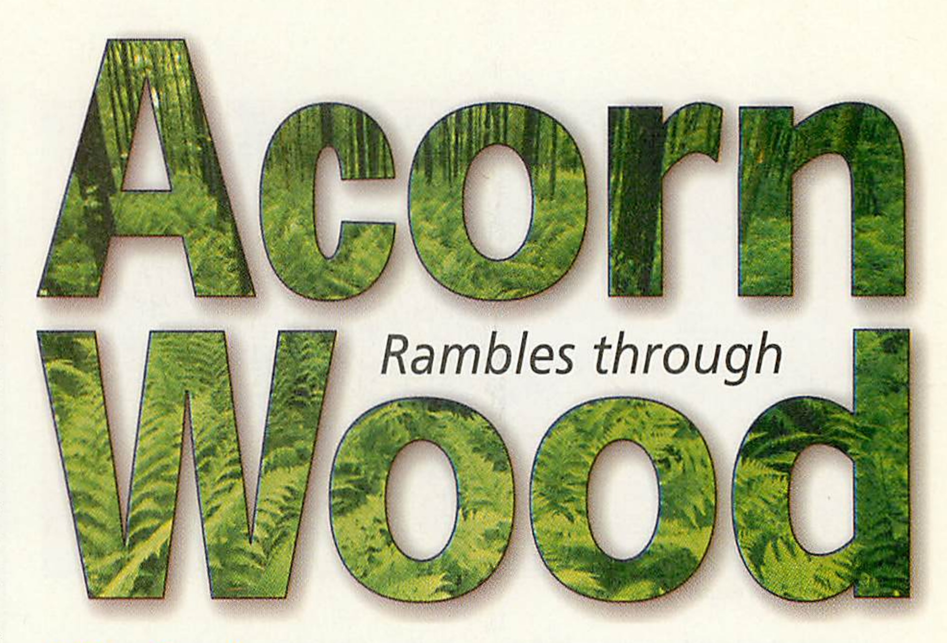
The application *!Chime* is on the cover disc and monitors the logic levels on the first six pins on the printer port. Of course you need a bi-directional printer port for this but if you haven't got one then you can use one of my many published alternatives to read the switches. You will need to make the appropriate small tweeks to the application to reflect your interface. When a switch is detected as being closed, that's a logic zero, the appropriate LED icon is changed to a lit LED icon and a sound is generated.

If the menu selection is for a MIDI output the appropriate Note On command is sent to MIDI channel 5. When the switch is opened, thus giving a logic one on the input, then the Note Off command is sent. If you haven't got a MIDI system then you will have to use the computer's own sound system. I used six channels so that you can get the maximum polyphony; that's notes on at the same time. You can use the built-in sounds here or any other system format sound. Use the *!Boot* application to set the sound you want.

If you are really interested in sounds then a MIDI interface and sound module are essential. With this you can generate a wide variety of quality sounds, use my MIDI sound software, also on the disc, to select what sounds you want. I found the best results were with sounds that had a sharp decay like chromatic percussive sounds. I liked church bells and tubular bells but other sounds can be interesting, however the washy synth pad sounds were less effective as there was not much change when the pendulum triggered them.

With all projects there is room to add your own touches. For example you can modify what notes correspond to what switches by changing the numbers in the procedure PROCmap. You could make this a two dimensional array and change the mapping on the fly, by generating a random number for the other array index. Also you can change the MIDI sounds automatically, say every time the fan kicks in.

Hopefully with all these variations my electronic wind chimes won't drive you as mad as conventional ones. AU



Mike Cook catches up on his correspondence

A bumper post bag this month helped by the discovery that some of my mail, both written and electronic has been going astray. So first up is Francis Chin who has some good news for audio fans:

"In the January issue of *Acorn User*, someone by the name of 'Kato' inquired whether someone would take up the challenge of porting the excellent *WinAmp* program from the PC. David O'Shea (of SymbioSyS) has been working on a RISC OS version see http://ocean.ucc.ie/99/oshea/acorn/soon.html for more details.

It is currently being beta-tested, but there is still some work to do before it has the array of features that *WinAmp* boasts. Unfortunately, its MP3 playback capability is limited to that of dmpa which does not appear to be actively developed by its author, Ossi Lindvall. However, it supports the majority of skins available for the PC version."

A regular visitor to the Woods here is Dr Tony Lindop who wants to comment on the problems Richard Fearn was having with BBC DFS floppy disks in the February '99 issue:

"What he needs is a buffered interface which fits into one of the standard A5000 podule slots. They cost about £25 from an Acorn dealer and provide the link between the A5000 internal disk connectors and a standard BBC-B disk drive connector. "I got one with my A5000 when I bought it originally and I use it to connect to a Cumana 40/80 track 5.25 inch drive. When the drive is switched on it appears as a floppy disk icon alongside the normal 3.5 inch drive. I bought my interface from AISystems and had to replace it only last year after an accidental short circuit. They even had one in stock when I visited their shop.

"If Richard needs to read old 40 track DFS disks on an A5000 the best solution is *!ImageDFS* from Warm Silence Software. When this is run any DFS disks can be read using the normal RISC OS filer system. It works particularly well with the parallel application *!6502Em*, which is a very good BBC-B emulator and allows old DFS disks to be run using Shift+Break.

"If anyone wants a cheaper alternative I wrote a disk sector reader a few years ago as an exercise in learning Wimp programming. This includes a capability to read DFS 5.25 inch disks and copy files to the normal ADFS filer. Perhaps I should post it on my Web site. When I get round to it my Web site will be http://www.lindop.demon.co.uk although at present it only contains advertising material for the family business."

Hugh Fletcher has another solution:

"Richard Fearn wanted to put a 5.25 floppy on his A5000. Easy, just plug it in to connector B (PL11) which is nearest the internal floppy. These descriptions are looking from the front. Link 19 is towards the back, it should be unmade (plug retained on one pin) Link 21 is towards the front.

"It should connect 2&3 (centre + right) *Configure step should be 3 or 6 for 80 track double density or 6 or 12

Hugh Fletcher, who describes himself as being from another one of the worst Universities has some feedback from an earlier issue. Mind you his University will have to be pretty bad to rival Manchester Met, remember girls and boys stay away from that one.

"With regard to the StrongARM not running with a PC card, I have been surprised not to see this before. I was told that 5% (1 in 20) of machines have this problem. It is a timing problem between the StrongARM and the PC, via the motherboard, 200Mz is VHF, so I guess inductance or capacitance effects. It will be fine with an A710.

"The simplest change is to turn a resistor through 90 degrees on the StrongARM card. If this doesn't work, the whole shabang goes to Reflex Electronics for modifications to the motherboard. This should work, and should be free, certainly under warranty.

"When this happened to me they arranged a carrier to collect and return. This would have been fine if they hadn't destroyed the hard drive (switched off without parking the head?) so the whole lot had to go back again.

"Then the motherboard failed – a temperature sensitive loss of video on hot days. I got a new motherboard (warranty) but guess what? No reply from the PC card. So back to Reflex. This time they didn't fix it properly, but I had such a backlog of work and publisher pressure that I put the A710 back in and am living with it...I now discover that the Lark card has lost all in/out, so I am not at all pleased.

"Did some professional forget to earth himself? Does this make me the 1 in 400 who get two dodgy motherboards?

"While I am writing could I ask a question some of your projects use an I2C bus, which I have no doubt you described in detail about 1995. I know nothing about it, is it on the card slots? Is it the card slots themselves? As a past constructor of a 1MHz bus interface for a spectrophotometer, I am interested."

Well the original I2C articles are on the Net if you want to look them up but basically this interface is built into all Acorn machines so that they can read the real time clock and parameter RAM. It consists of just two wires that are brought out to two pins on the podule connectors, data pin 20c and clock pin 19c.

So if you have a spare podule socket you can make up a wire that brings these, together with two power supply wires to a back panel plug or flying leads. If you don't have a free socket then these signals can be accessed by simply soldering a wire to the pins of one of your podules. This bus is not too fast giving access at only about 3K accesses per second, but it is fast enough for most things.



for 40 track single density. Formats accepted without further software are ADFS 800K E , 800K D, 640K L, and (I think) DOS 360K. DFS needs DFS software. This can take two external floppies, internally set to 0 and 1, so the pair straight off a Master work OK. Some very old drives may not work.

"The types supplied with later Masters seem to work, but he may have to change the *Configure step setting, 3 seems to work for me. There should be lots of old 5.25 drives about, if they haven't gone in the bin. The Master used ADFS, and the A5000 is quite happy, I am still transferring View files from my Master to my A5000, importing them as text. *!Impression* will do a conversion, but doesn't like the extra highlights."

Next up, Allan Williams from Alphington wants to know why his 98Mb machine is apparently running out of memory:

"Can you please advise me why when I am using *!Draw* I am advised that there is not enough memory, and am advised to quit any unwanted applications? When I load 20Mb of Sprites on to a draw canvas and then attempted to add another of 4,773,224 bytes the out of memory message appeared, there is still 74Mb left in RAM."

I think you are running up against the limit of the operating system here. If you try to drag the Next bar in the Task Manager window you will find it won't increase past 28Mb. This is because RISC OS is only a 24-bit operating system and you are running up against the limit of memory it thinks there can be. This is one of the problems any successful OS upgrade will have to cope with.

In your case you seem to be 4Mb short of the maximum but I suspect undo buffers and the different way *!Draw* stores the sprites is to blame. Now the error message was designed at the time when 28Mb was indeed infinity and so the programmers reasoned that if there was not enough memory left then quitting a few applications might just free up some more, it was supposed to be user friendly.

Alan also has a bunch of PC card related problems, thanks to Mike Buckingham on the PC page for some of this information:

"I want to add the ideA interface to speed things up. Will this be seen by the PC card and would the interface really give about twice the speed of the present setup?"

No reason why not provided they are set up as PC partitions as per normal. In fact the PC card Mike Buckingham uses runs off RapIDE, as does everything else! You can also run off SCSI if you want. As to actual speed increases you will only see this if the program or booting procedure is being held up by hard disc access and seek time, there is no real way to predict any real life improvement.

"Can you tell me why *Quicktime 32* is very bad at reproducing sound. I have noticed that the *Quicktime* program only recognises my PC card as a 486 and there appears to be no way of changing this. Could this be the reason for poor performance?"

No, in the greater scheme of things you only have a 486, what the program is recognising is the instruction set in your processor. The problem with *Quicktime* is that it is an Apple product that was added to the PC, and Microsoft made a very poor job of porting it (this is part of what they are being sued for at the moment). Now bear in mind that this has to be simulated on an Acorn and you can see the difficulty.

I know that there is a real PC processor in your machine but all the peripherals have to be simulated by the RISC machine. I understand Aleph know about this problem but can't find a solution. *!PC* alone has limited sound capability but *!PCSoundPro* from R-Comp fixes many problems and improves matters greatly. Should be used with *!PCPro* too.

"Also could you also advise me how to improve the setup of the filing system in System Properties on the PC as it defaults to the MS-DOS compatibility mode file system drivers."

Sorry, you can't improve things because this is right. *Windows* doesn't like the software drivers that are used in the Risc PC because we don't have 'proper' chip sets and PC type stuff. So the DOS disc drivers are software emulated. This means that they appear to *Windows* as second best, which therefore advises we arrange for 'proper' ones. Well, you *are* using the best and only ones available.

Maybe if RISC OS Ltd, or whoever, redesign the motherboard with PC style chip sets that will change, but not yet. There is a 32-bit driver around (third party but I think can be accessed via www.aleph1.co.uk) which should speed things up and make better use of bigger discs. But I haven't tried it and Aleph1 don't recommend it for a primary partition or drive.

"Can you also tell me if the restriction to 32Mb on the PC card is a hardware or software restriction, and if it can or will be overcome with the current Risc PC."

I am not sure on this one but I think it might be due to the operating system again. AU

I got an e-mail from Sam Ellis at the Department of Electronics & Computer Science, University of Southampton. He is writing an Ockham compiler that produces PIC code and has been using my simulator to test it out. He has found a couple of bugs and so has Anthony Pleace who writes:

"I have been successfully using these programs for the past term with the sixth form boys in the school where I teach. I am very pleased with the programs as they are easy to use and work well. I have only experienced one problem with the simulator.

"The simulator does not indicate a change when setting the carry bit of the status register. Up to now I have used PIC 16C84s but I am not able to get any more of these chips and have been told that I should now use a PIC 16F84. I have so far been unable to program this new chip with the Maplin programmer. I understand that there are few differences between these two chips. Can you help?

"I have another problem that I have been trying to solve which you may be able to help me with. I would like to write a program to get information from the serial port and save it in a file. I have been able to do this for a PC by writing a program in C but I have little idea how to address the serial port on the Archimedes. Can you help?"

Thanks, I have amended the simulator code to cover these bugs and a couple of others I came across myself, and the latest version is hopefully on this month's cover disc. In his full letter Anthony says the RRF instruction when used on PORT A will work. However, according to the data sheet the top three bits of this register can't be written to, so shifting a 1 from the carry will not, after three shifts, appear on the display. I have not tested if it does in "real life", but that's how the simulator works.

I use the 16F84 all the time and have no problem with it, it does have twice as much register memory as the other chip and the simulator won't cope with that at the moment. The only thing that is different is that the delay on power up flag is inverted. When the programmer first runs this is ticked, make it a cross and that will enable it, otherwise it is the same. However I have found with the 16F84 chip I have to do an erase the first time I use the chip, this wasn't the case with the C type chip.

You access the serial port using SWIs and it is quite simple. Look at the Basic programs in any of my articles that use the serial port and you will see. However, just to remind you there is an example on the cover disc – hopefully.

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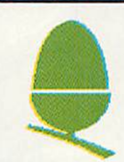
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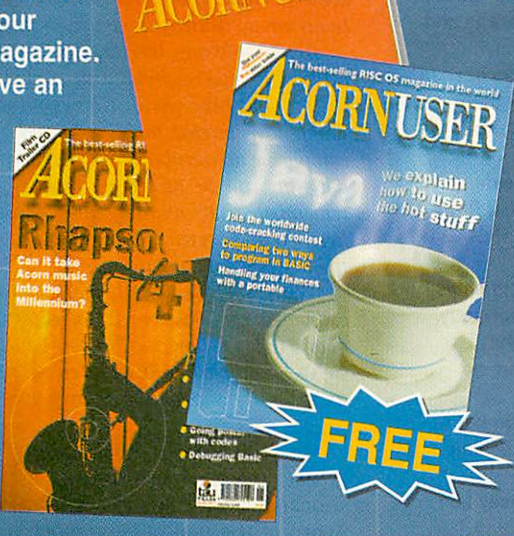
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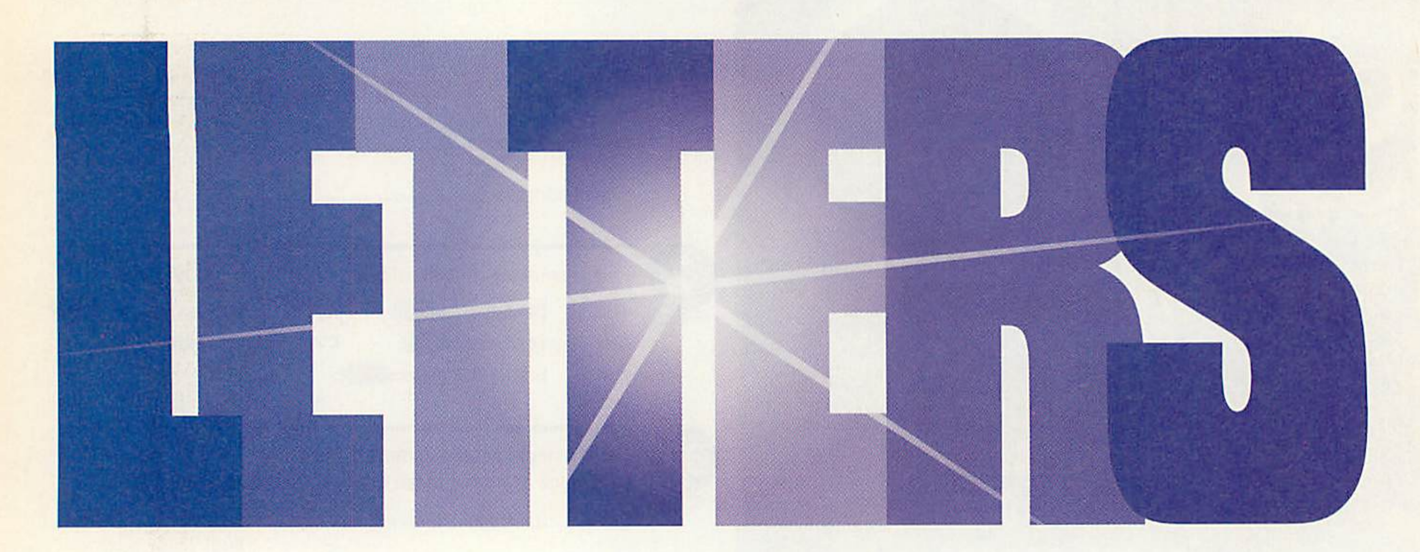
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Anybody out there?

Recently a reader wrote that Acorn computer users were not prepared to pay out for software for the Acorn platform. Now while I think that some of the software is good it *is* a bit expensive. Games on the other hand are no dearer than on other platforms.

My gripe is the lack of support for users, I updated my Risc PC to StrongARM last year so I could run my software faster and hopefully play the latest games. I am still waiting for an update for *!Super pool & Snooker* from Fourth Dimension (since last October, whenever I ring they just say they are having problems with it, but they still cashed my cheque, so I won't be buying anymore of their software) and other software and games I have either refuse to work any more or don't work as well. *!Cannon Fodder* (slow) *!Lemmings, !Simon the Sorcerer, Turbo Driver* even though I updated it and yes I have *!StongGuard.*

Also what has happened to *Acorn !Quake*? Well in the games world it's already too late – there is now *Quake, Quake2, Unreal* and the best of all *HalfLife.* Now if someone was to put that on the Acorn platform....

After that I got fed up and, you guessed it, I bought a Pentium PC for Christmas. I had thought of selling my beloved Acorn but I am keeping it so I can play on that when the PC has crashed and is running *Scan Disc* or something. By the way I have bought the above games for the PC, if only they could have been for the Acorn, and yes I bought *Acorn !Doom* as soon as it came out.

I would still be interested in buying *!Quake* just to see how it runs compared to the PC and if I could network them together, wow, that would keep the kids happy.

Chris Hallows
chris@challows.freeserve.co.uk

Well Chris, I'm afraid that I'd have to disagree with your opening statement "Now while I think that some of the software is good it is a bit expensive. Games on the other hand are no dearer than on other platforms".

Acorn software has always erred on the affordable side, especially in comparison to the PC and Mac world. Games on the other hand have tended to be a bit pricey when comparing across platforms. There's no doubt bargains can be picked up, but we have to remember that many games have to be licensed and ported, adding cost and delay to the releases.

With such a small market and with computers that last forever, the games scene is bound to lag behind the PC world. Just be glad we've got people like RCI who're willing to take a chance and support the Acorn games market.

Viewpoint

When Tau Press was formed to take over the publication of Acorn User I was reasonably confident about the future – we were expecting the Phoebe and RISC OS 4 at the Acorn World show – but Acorn were still Acorn and there had been recent nastinesses perpetrated in the boardroom.

Tau Press was having its first staff meeting on the morning of Thursday September 14th when I received a phone call telling me of the Acorn debacle. What could I do? Well I laughed – probably hysteria setting in – but again I was reasonably confident in the market itself, after all the users weren't going to disappear overnight.

But it did make things harder.

The long haul from then to now has been quite painful – those who don't have access to the Acorn newsgroups on the Internet have been spared the rumours, false dawns and the gloating of anti-RISC OS gadflies who make it their business to be unpleasant.

Here we are six months down the line finally at the point we would like to have been in much earlier: RISC OS development in the hands of people who both care about the product and have a proven record in sales and marketing – a rarity in the Acorn world.

But it is not over.

RISCOS Ltd has the right to develop RISC OS, they are taking the trouble to extend its functionality well beyond what was envisaged and planned by Acorn – the original RISC OS 4 had much improved performance but had few additional features. The new RISC OS 4 will have the features as well.

Further developments include removing the dependence on expensive custom chips (IOMD and VIDC) so new hardware will be cheaper. And, perhaps even more importantly, altering the software so that it will run with full 32-bit addressing (instead of 26-bit) otherwise there will be no ARM chips that will accept RISC OS, since ARM Ltd are no longer developing chips that permit 26-bit addressing.

If you care about the future availability of your chosen platform become a member of the RISC OS Foundation and you'll know that your cash is going to directly to keeping RISC OS at the forefront of computer development.

Perhaps they can do it without your help ... but with it they can do it more easily and faster.

Steve Turnbull

RISC OS optimism

I, like many Acorn users, was totally shocked by the announcement by Acorn at the end of September, but have been generally heartened by the news

which has appeared since then. While I would agree that Acorn/Element 14 are wrong in completely alienating themselves from the desktop machine market, perhaps it was time for Acorn to change direction and investigate another branch of electronics.

I have been using a 2Mb A3010 for five years, and have been very happy with its performance and ability to run the latest versions of many commercial programs; the dealer and mail order network has impressed me too.

I am very proud to be an Acorn user. But my letter is about the new RISC OS Ltd. venture, of which I am very optimistic. I hope that this will see RISC OS being marketed as a completely independent operating system, suitable not only for Acorn desktop machines but also in applications. Having spoken to several friends at school with Wintel PC's, I asked them to truthfully tell me what they thought about *Windows*. Almost all of them said that they are not particularly happy with using *Windows*, but have had to because there is no alternative to it. If you buy a new PC 'off the shelf', you will almost certainly be using *Windows* on it.

Wouldn't it be nice then, if people had a choice as to which route they took when it came to operating systems. Of course, *Windows* is developed by the colossal Microsoft so at first RISC OS might seem like a very small force. But if a stable, well-developed and 100% British operating system can be successfully marketed the possibilities could be endless.

I also point to a news report that I read in which the head of Microsoft's R&D team admitted that *Windows* "will almost certainly lose its dominant position in the market over the next five years" and that "computers are significantly hard to use still... [and] aren't all they are made out to be". Is this criticising Microsoft's own OS?!

I have been very saddened by the constant flow of bad news in the last quarter of last year, but I think that the creation of RISC OS Ltd. is one of the most important opportunities for the Acorn market, and one which must be supported outright by as many of us as possible. While I hope to upgrade to a Risc PC one day in the future, I would think about purchasing another-branded machine if it was running RISC OS. This new venture is similar to that of ARM Ltd., which as we know was born from the Acorn stable and is now enjoying worldwide attention.

I will support Acorn machines for as long as they are being manufactured and developed, and while some people in the Acorn community mourn at the retirement of Acorn themselves, I think we must all learn to look further than the news about Phoebe and reassure ourselves that while there are still committed Acorn enthusiasts out there with expertise and practical minds, then we are in safe hands.

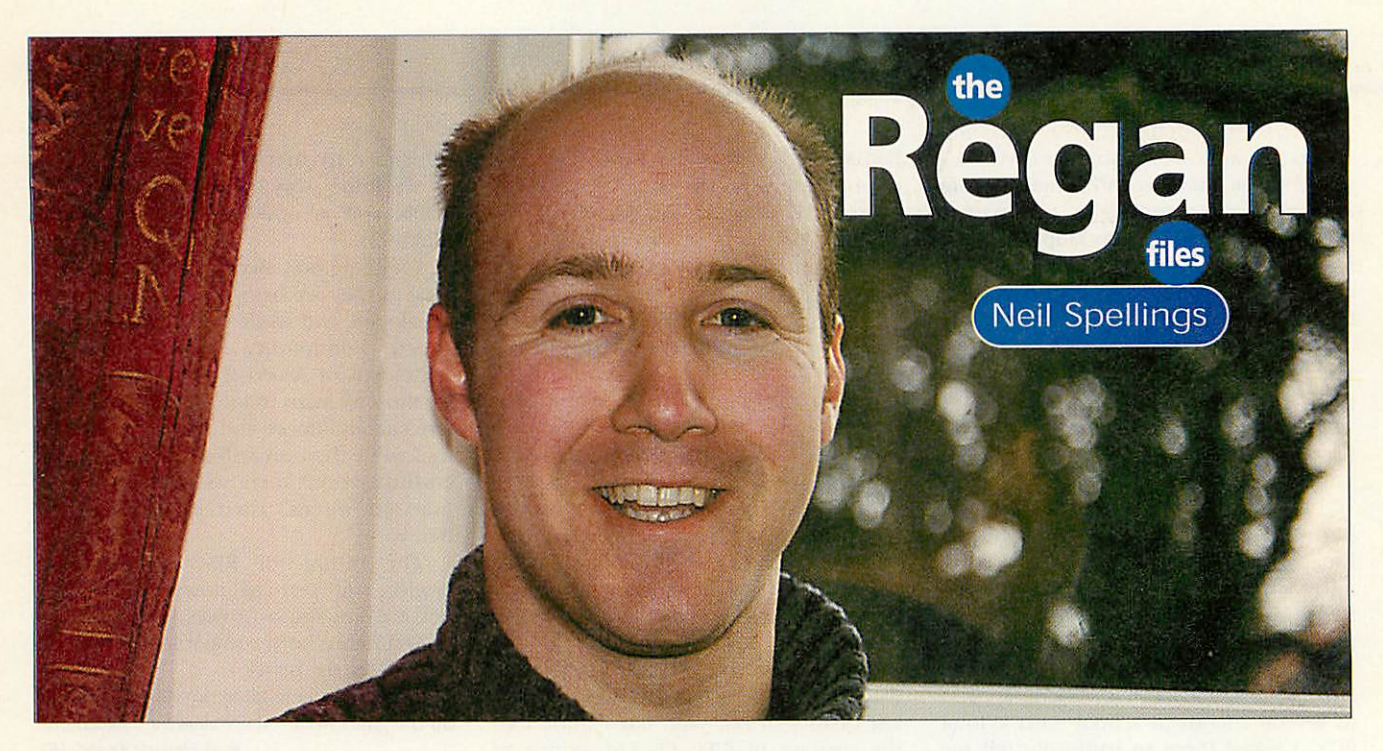
The future for RISC OS users is bright, and perhaps now the focus is less on one single 'Acorn', and now on several Acorn-born companies we will see change for the better.

Thank you for reading my views, and keep up the good work – the magazine's excellent!

Rod Dennis (aged 16)
(roders@altavista.net)

Cue those nay-sayers who just love it when people say this...."But if a stable, well-developed and 100% British operating system [RISC OS] can be successfully marketed the possibilities could be endless." batten down the hatches Rod...





It's a lovely scene – I find Neil Spellings with the film 'Herbie' on his new state-of-the-art wide screen TV. His excuse: "I used to have a red VW Beetle. It was infamous in The ARM Club, parked alongside Matt Cook's Mini. I have just got rid of it; it was spending most of the time just standing in the garden because I use public transport."

Neil Spellings is the Chairman of the Association of Acorn User Groups, which sounds to me a bit like one of those titles people invent for themselves for their CVs. And it turns out that Neil *did* invent the title in a sense, because the group was his idea.

"I originally was in the DARC (Derbyshire Acorn Risc Club). I moved down south and thought I still would like some user group type thing. It was 96/97, and all the user groups were working towards the same thing but none of them communicated. They were dotted around the country and I thought that it would be nice if there was some central point that the user groups could go to and get information. Out of that the AUG was born; I made myself chairman.

"I try to go to a lot of user groups but there is that thing called distance. I attend all the shows on behalf of the groups. There is a web site with all events and what is going on and an e-mail mailing list which every committee member of every user group in the world is on."

I should point out that the AUG is a non-profit-making organisation and is funded most of the time by Neil's own pocket and the articles he writes for *Acorn User*. None of it would be possible with out Neil's own input of huge amounts of time and effort.

Neil first got into using Acorns for his GCSE's and 'A' levels. This was thanks to Neil having a good computer teacher called Ian Rendall, a classroom full of BBC B's and his spending every lunchtime in there. Neil was made assistant network manager because of his enthusiasm. "You wouldn't believe the excitement," laughs Neil "when the school got its first A310."

Neil spent a gap year working as the school technician, maintaining Acorn kit before going to university to read electronic and computer engineering. There were Acorn computers there but only in the physics department which became well visited. Neil worked at Acorn during one summer for an industrial placement.

> **'I thought that it would be nice if there was some central point that the user groups could go to and get information.'**

"I worked on a lot of things but unfortunately they were scrapped, so Phoebe is not the first thing they have canned, there is quite a history. I did quite a lot of work on the Stork which was the portable project working on the backlight and the parallel port floppy disc. I did bits and bobs on other projects like the FP11 and PCMCI stuff. It was interesting to work there and it meant I got to buy a top-of-the-range machine for half price.

"At the moment I am working in the City as a systems analyst, on *Windows NT* doing roll outs and integration work. And you don't know how good it feels to come home at the end of a very long day to an Acorn machine and RISC OS." Incidentally Neil's high spec Risc PC occupies pride of place in his 'bachelor pad'.

"RISC OS 4 will work; there are enough people who want it," Neil emphasises. "I decided to get some shares, I am doing my bit and putting my money where my mouth is. I think it is about one percent of the company I own. Well I had a bit of spare cash lying around."

Neil's interview for *Acorn User* was just another thing he took in his stride. After all he had just been on television as part of a discussion about Acorn changing its name to E-14.

"My involvement came because the production company had visited the Acorn web site where AUG has a link, and so they e-mailed me. I did not know Stan Boland was going to be on until a few minutes before taping. I was put in a room with him with no introductions, I sort of recognised him and said: 'You must be Stan'.

"It was interesting just watching how the programme was made. They record it in a way to make it appear live, so they try and do it in one take. It is quite scary when you walk in and see all the monitors. Both Ian Burley and I expected our sections to be longer, but we both got our twopenneth in. Afterwards we had a long chat with Stan – he seemed quite an open and genuine guy. It was interesting hearing things from his perspective."

So Neil's already had five minutes of fame; I wonder when his other ten will come?

Jill Regan AU



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